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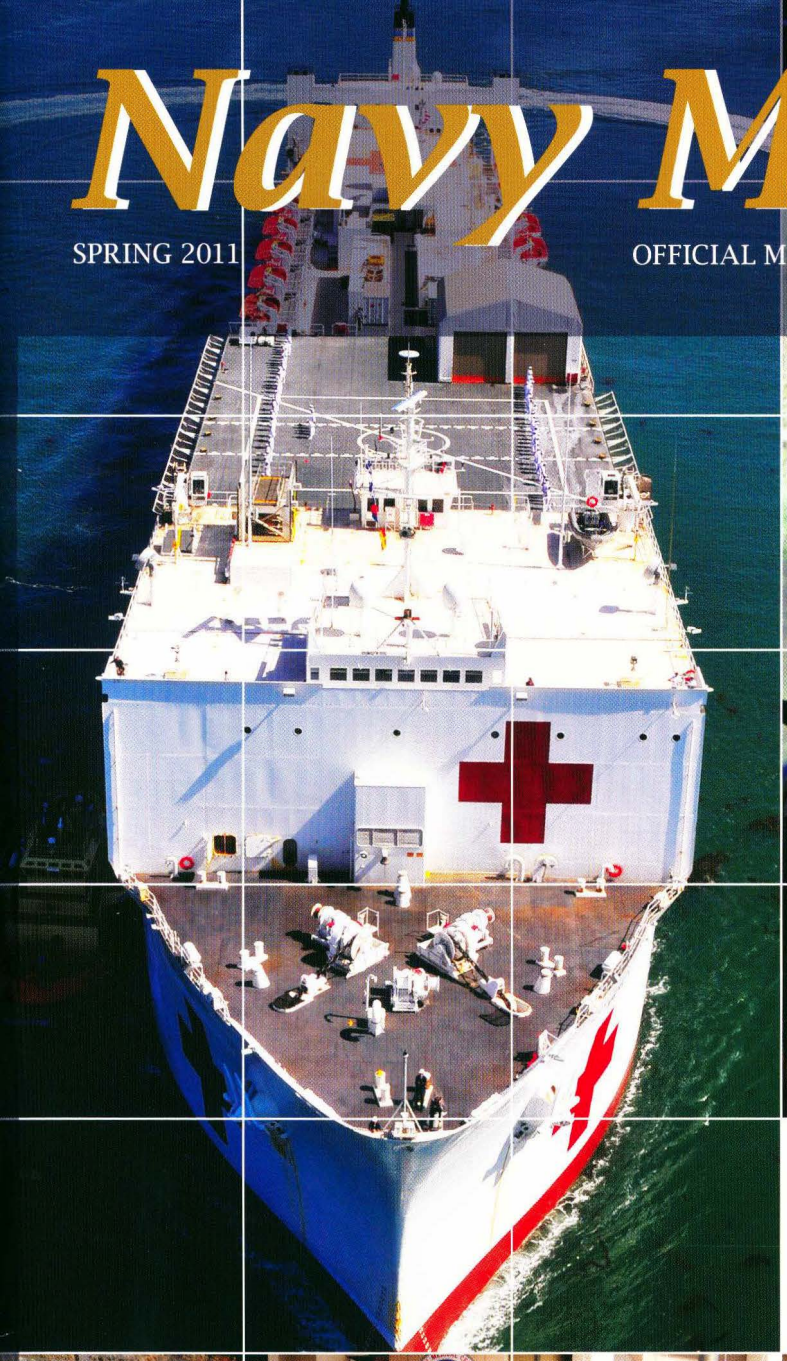
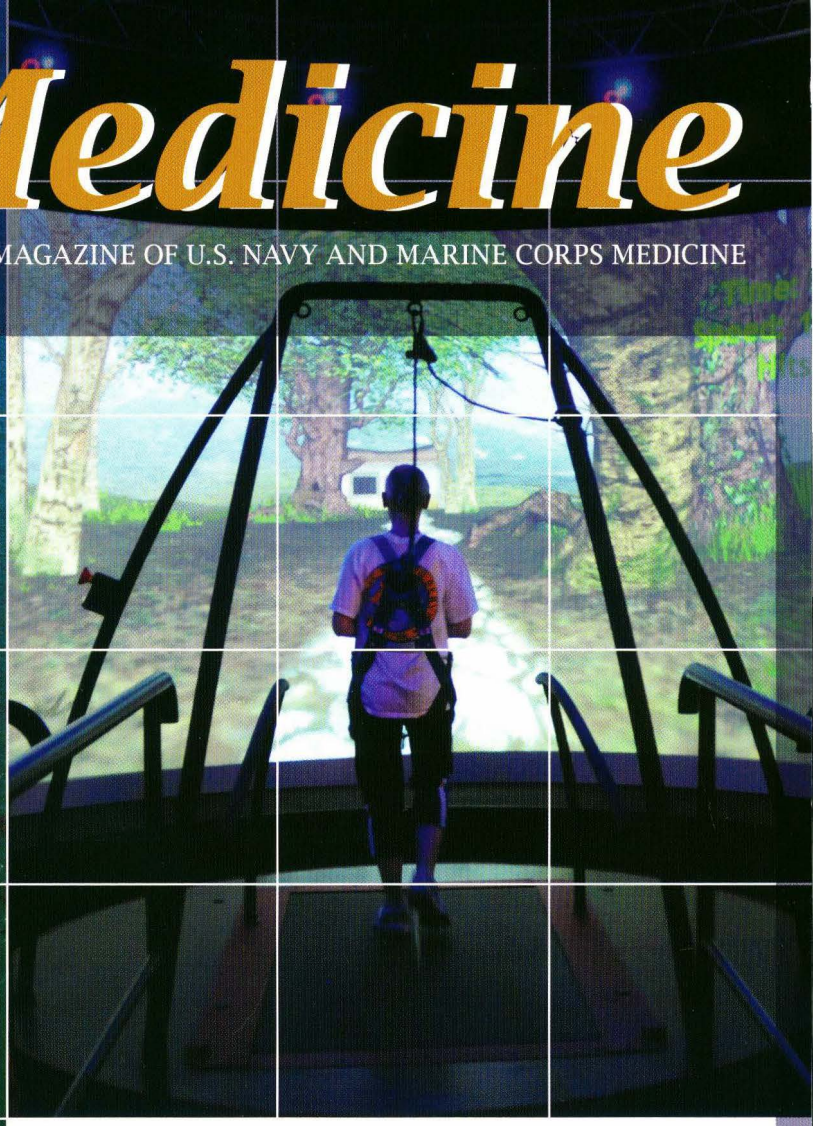
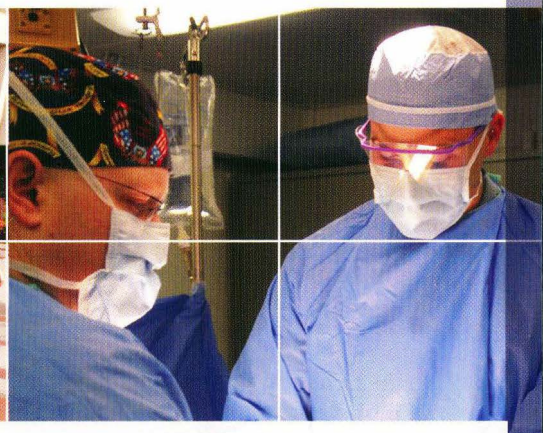




BUILDING THE FUTURE FORCE



WORLD-CLASS CARE...ANYTIME, ANYWHERE

10 Medical Home Port | 12 Sailors Train With Hollywood Style FX | **20** NAS Jacksonville Aviation Survival Training Center
26 Deployed Warrior Medical Management Center | **30** Navy Expeditionary Medical Training Institute
32 NICoE Offering a Unique Approach to Patient Care | **40** Medical Education Training Campus

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Guidelines for submission to NAVY MEDICINE.
About Navy Medicine:
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Submission Requirements:
Articles must be between 600-1,000 words.
All articles must be present tense/active voice.
Photos must be minimum 300 dpi.
Photos showing action are preferred.
All photos must be accompanied by a caption and photo credit.
Subjects considered:
Scuttlebutt: Stories about activities at MTFs and the field.
Photo Album: Action shots from across Navy Medicine.
Feature Articles: Stories featuring interesting contributions of Navy Medicine to military operations including everything from combat support to Humanitarian Relief/Disaster Response will be considered. Please contact Shoshona Pilip-Florea (shoshona.pilip-florea@med.navy.mil) for current theme of issue in progress.
R & D and Innovations: Any new processes and/or research and development news.
Quality Care: Anything that improves the quality of care for our patients.
IT, QA: Any articles showing how Navy Medicine is utilizing the electronic age.
Shipmates: Anything interesting about our shipmates working in the healthcare field in the Department of the Navy.
All submissions must be accompanied by complete contact information for author. In the event there is more than one author please assign one author to be primary correspondent.

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Surgeon General of the Navy
Chief, BUMED
Vice Adm. Adam M. Robinson, Jr., MC

Deputy Surgeon General
Deputy Chief, BUMED
Rear Adm. Karen Flaherty, NC

Force Master Chief
FORCM(FMF) Laura A. Martinez, USN

Public Affairs Officer
Capt. J.A. "Cappy" Surette, APR

Deputy Public Affairs Officer
Shoshona Pilip-Florea

Assistant Editor
Paul Dillard

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NAVY MEDICINE Magazine
Bureau of Medicine and Surgery
Communications Directorate
2300 E Street, N.W., Washington, DC 20372-5300
E-mail: BUMED-PAO@med.navy.mil

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Navy Medicine

Volume 103, No. 2, Spring 2011

4 ADMIRAL'S CALL

6 FORCE NOTES

10 FEATURES

10-11 Medical Home Port
12-15 First Responder Lane Training
16-17 NMCP International Medicine Program
18 Pan American Regional Congress
19 Bremerton Chaplain Trains for Kandahar
20-25 Jacksonville Aviation Survival Training Center
26-27 Deployed Warrior Medical Management Center
28-29 NNMC Promotes Virtual Colonoscopies
30-31 NEMTI Trains Providers for Combat
32-35 National Intrepid Center of Excellence

36 QUALITY CARE

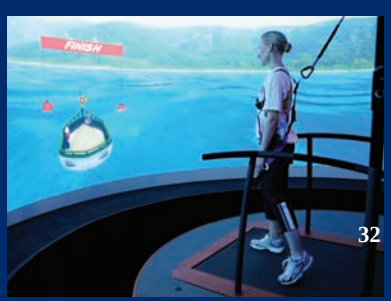
36-37 Clinical Pathologist Receives Mastership
38 NMCP Orthopedic Fellowship Accredited
39 Corpsman Wins Hunter-Strickland Award
40-41 METC Campus Fully Operational by September
42-43 NHCL a Leader in Blood Platelet Collection

44 INNOVATIONS/ R & D

44-46 Keeping Warriors Healthy and Flying
47-49 Science and Innovation From Around the Fleet

50 A LOOK BACK

50-51 Join the Waves!



Admiral's Call

Navy Medicine Building the Future Force

Our mission spans the globe, from U.S. hospitals within the TRICARE network, to our operational fleet and fleet Marine forces, overseas hospitals, Medical Battalions, Research Units, and hospital ships. None of this would be possible without a razor sharp focus on taking care of our people. Integral to that is having the right education, training, recruiting/retention, and diversity programs that attract, train, retain, and build our future force.

I recently spoke at Navy Medicine's annual Leadership Symposium. This year's theme was "Total Force-Focusing on the Future." The Symposium's objectives are worth repeating because they really should be our focus as well in how we build our future force in the coming years: 1) Improve our readiness to fully support current and future operations; 2) attain agility in how we lead, how we communicate, and how we support our diverse staff; 3) strengthen our delivery of primary care; and 4) adapt to the changing environmental healthcare needs of our population.

All of these goals really must start with a highly skilled and diverse people with the right education and training in order to deliver cutting edge health care, anytime, anywhere, in support of the full range of military operations.

This month's issue highlights some of our programs and recent accomplishments designed specifically to build and sustain our future force. Our personnel are the single most important asset in our organization, constituting about 70% of our O&M-budget. How we educate, train, organize, and lead our people is critical to mission accomplishment. This includes Active Duty and Reserve personnel, Officers and Enlisted, civilians, and contractors. With the Secretary of Defense's emphasis on thrift and efficiency, we must define our requirements and optimize our people because there will be even greater pressure coming to properly size our Total Force to maximize benefit while reducing costs.

The Chairman of the Joint Chiefs recently released the National Military Strategy for 2011. In it he said that "our focus on leadership, not simply power, necessitates that we emphasize our values and our people as much as our platforms and capabilities." I could not agree more. The strategy goes on to say that "the enduring challenges we face and the whole-of-nation approaches they require demand leaders that have the qualities of flexibility, agility, and adaptability, and the ability to build unique teams of teams to accomplish missions." To the 63,000 personnel that make up the Navy Medicine community located around the world, this certainly applies to us as well.

Getting there will require new ways of thinking and dedication to see our vision through so it becomes a reality. This is no small feat, but I believe our Total Force Concept, also called our Medical Manpower Strategy, leads us in the right direction towards the Chairman's vision. It begins with measuring how to best allocate our limited resources and diversity of our talent across the Enterprise.

Over a year ago, we began an Enterprise-wide assessment of the size, specialty levels, and distribution of our Total Force billet requirements and personnel inventories. This yielded the development of several assessment tools. MedMACRE provides an analytical defense for sizing our force, especially for less than full mobilization scenarios and issues relating to Force Specialty Mix. Demand Based Staffing Tool is a regional and command level management tool that takes inputs from MedMACRE to help create uniform requirements. Fit-to-Fill Assessments help identify who is doing the work and where the work is being done. Lastly, Total Force Assessments provide more transparent assessments of force mix, distribution, and Military Training Facility workload, and are used in partnership with the Bureau of Medicine and Surgery, Regions, and Commands.

Our Total Force Concept is about standardizing how we allocate, recruit, retain, educate, train and incentivize the right work force for the right mission across the Enterprise in order to eliminate gaps and overlaps, increase efficiencies through resource sharing, and integrate learning strategies.

Another major piece of our effort to build the future force is our Medical Education Training Campus (METC), now the largest consolidation of service training in defense history. Located in San Antonio, METC is a fully integrated tri-service

education and training school to prepare Sailors, Soldiers, and Airmen. METC will leverage the assets of all defense health-care practitioners in order to support about 9,000 students daily.

We are also increasing our outreach across the board. BUMED recently became a stakeholder in the Navy Community Outreach office (NAVCO)-run "America's Navy" national outreach effort. We will be participating in four Navy Weeks in 2011 and more than 80 speaking and community outreach events nation-wide. We are still the front-runner in creating diversity in the Navy. I credit this success to our Diversity Action Plan that aligns to CNO's five pronged approach of effective strategic communications, training, outreach, mentorship, and accountability. Diversity is a strategic imperative that we must embrace if we are to remain a competitive force.

Lastly, I want to emphasize that our resilience programs remain one of the most important aspects to building and sustaining our future force. The effects of war have taken their toll on our men and women and their families. We must continue to be ever mindful of the transition and integration challenges of our service members returning home from a war zone.

I recently visited Afghanistan along with my Army and Air Force counterparts. We visited many of our Role 2 and Role 3 hospitals and military training facilities. We also saw our mental health professionals embedded with our teams on the front lines. Our operational stress control and readiness teams are there in theater because that is really the best way to stem some of the consequences of stress and mental health issues. I believe that if we can treat them in real time in the field, we can get an individual back to duty faster and we can probably cut off the necessity for any long term treatment or long term disability from illness.

If we focus our attention on early prevention measures, we will ensure that the seen and unseen injuries of war that are related to post traumatic stress, concussion, and TBI can be minimized or mitigated. This will help keep our forces mentally and physically fit and ready, and will ultimately serve to help Navy Medicine sustain and build our future force for generations to come.

It is my honor to represent you as your Surgeon General. Thank you for everything you do, and most of all, thank you for your service.

---Vice Adm. Adam M. Robinson, Jr.

HELMAND, Afghanistan (Feb. 14, 2010) U.S. Air Force Surgeon General, Lt. Gen. Charles B. Green (third from left), U.S. Navy Surgeon General, Vice Adm. Adam M. Robinson Jr. (fourth from left), U.S. Army Surgeon General, Lt. Gen. Eric B. Schoomaker (fourth from right), with USFOR-A Commander General David H. Petraeus during a tour of military medical facilities in Afghanistan. Courtesy photo. (Released)

Championing Medical Home Port

My staff has just returned from Naval Hospital Pensacola (NHP), Fla. following a cursory review of their medical home port operations and, I am delighted to report, all is moving forward splendidly. Medical home port was designed specifically to increase access to care, improve clinical quality, ensure patient satisfaction, and to collaboratively align civilian and military healthcare delivery practices. And, in every regard, NHP actively reinforces all of these concepts.

I would also argue that much of NHP's success is derived from Hospital Corpsman who are now consistently delivering patient care, receiving hands-on training, and are encouraged by their enhanced roles in providing that care. As a result, patient satisfaction has risen exponentially, while the number of days patients must wait for care has decreased by nearly half.

I know change is sometimes a difficult obstacle to overcome and variations in practices and personnel make transformation variable as well. I am also aware of the successes many of our facilities are enjoying with their unique implementation of Medical home port practices. Medical Treatment Facilities Navy-wide are, themselves experiencing many of the same challenges and rewards as they are establishing Medical Home Port within their respective regions.

Finally, we may have just scratched the surface of the potential benefits of correctly implemented Medical Home Port Practices. While we have the responsibility and honor of delivering shore-based care to our active duty, retired, and beneficiary population, we also have the enduring obligation to train our Sailors; too often these conflicting priorities are difficult to align. Such does not have to be the case with innovatively installed Medical Home Port facilities. Hospital Corpsman Basic Skills courses can be effectively managed with a cooperative between enlisted and officer leadership, personnel resource sharing between clinics and hospital home-port facilities can ensure the oversight and evaluation of sickcall and acute treatment guidelines, and Sailors can prepare for overseas and operational assignments by including annual Tactical Combat Casualty Care practicum's into Home Port training calendars. This and much more may be accomplished by reaping the professional advantages of a universally adopted medical home port system of healthcare delivery.

SAN DIEGO, Calif. (Feb. 3, 2011) Hospital Corpsman 1st Class Michael Astorga crawls through a mud pit during a tactical combat casualty care field exercise at Naval Medical Center San Diego. The exercise is a pre-deployment requirement. Those who pass the course will be trained in managing the most common battlefield combat injuries. Photo by Mass Communication Specialist 3rd Class Samantha A. Lewis/Released)

The success or failure of nearly every initiative is directly related to the presence or absence of a champion for that cause. My challenge to you is to champion not only Medical Home Port, but also those programs that can and should be directly tied to Medical Home Port. If history has shown us anything, it is boundless potential of the Hospital Corpsman, and I have every confidence in your future success.

---Force Master Chief Laura Martinez

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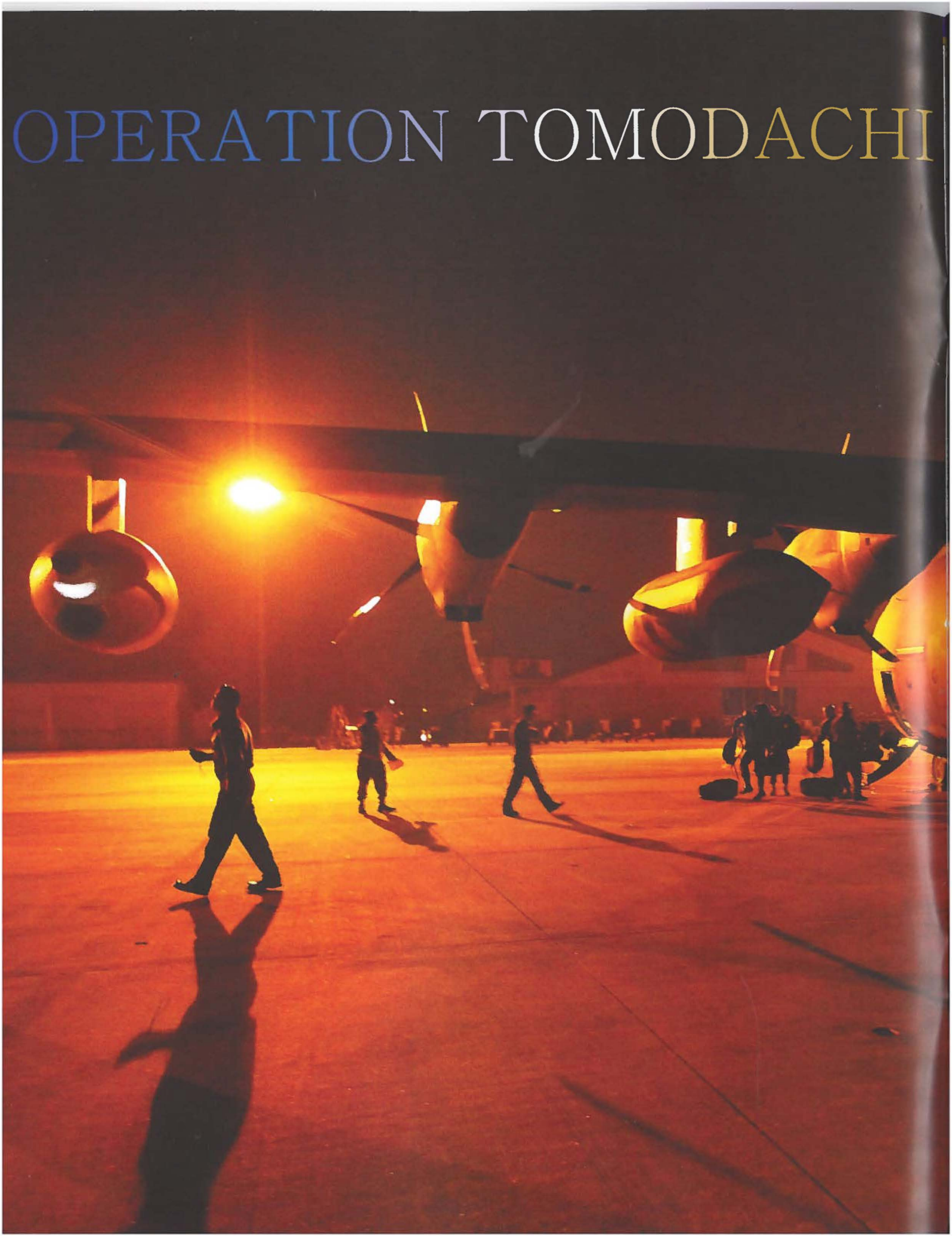
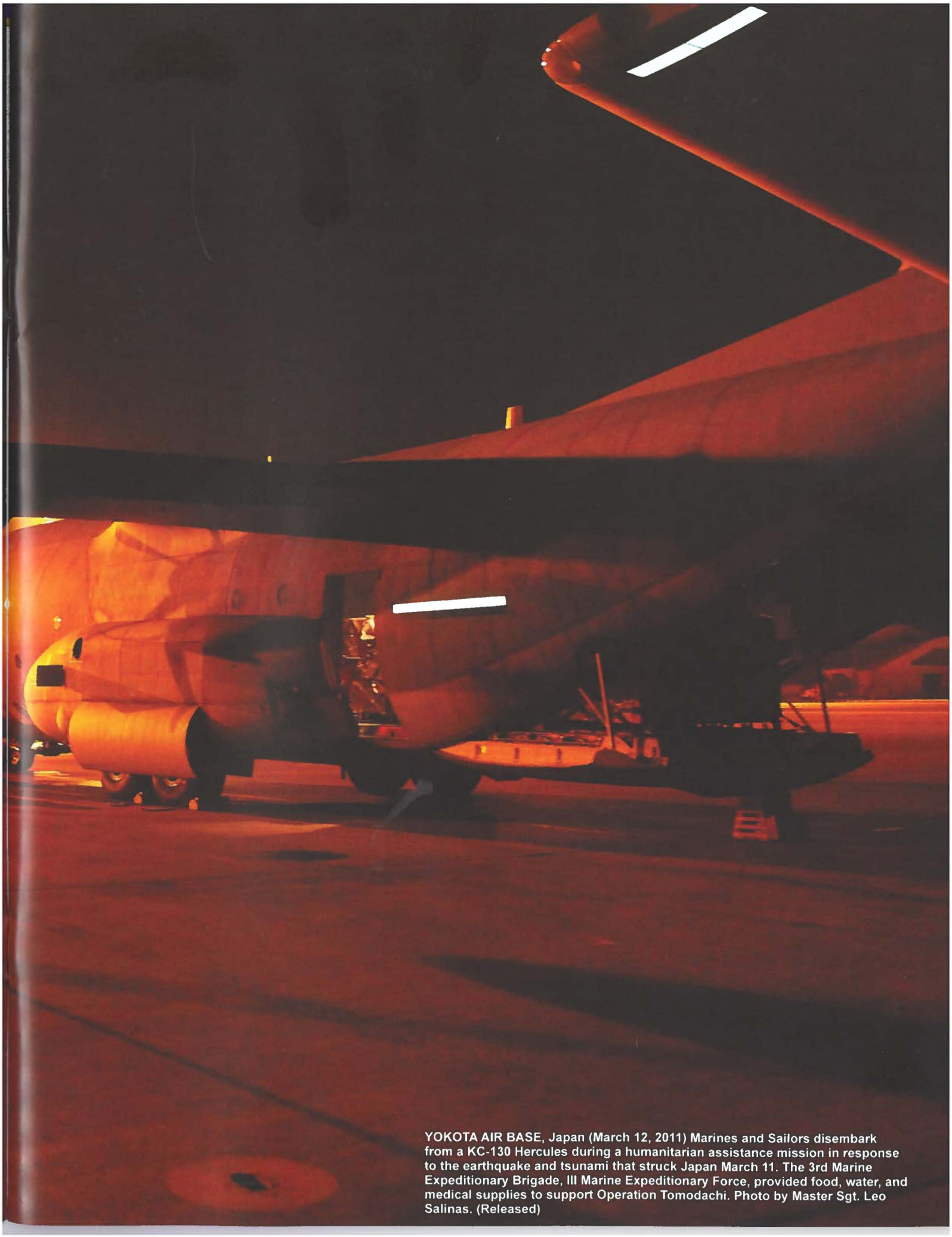




YOKOTA AIR BASE, Japan (March 12, 2011) Marines and Sailors disembark from a KC-130 Hercules during a humanitarian assistance mission in response to the earthquake and tsunami that struck Japan March 11. The 3rd Marine Expeditionary Brigade, III Marine Expeditionary Force, provided food, water, and medical supplies to support Operation Tomodachi. Photo by Master Sgt. Leo Salinas. (Released)

Navy Medicine Stays Ahead of the Innovation Curve through 'Medical Home'

Navy Medicine is revolutionizing the delivery of patient- and family-centered care through the Medical Home Port model. From implementation of the model to the long term vision, Medical Home Port is one of the Navy Surgeon General's top priorities for 2011.

The Medical Home Port concept emphasizes team-based, comprehensive care that is designed to fully meet the complete primary care health and wellness needs of patients. In the model, patients are assigned a team of healthcare professionals who support a comprehensive health care plan for the patient.

"This is a 'game changer' in how we have done business in the past, but I am very confident that Medical Home Port is the right thing to do, is achievable, and is fully consistent with delivering patient and family-centered care," said Vice Adm. Adam M. Robinson, Navy Surgeon General.

According to Robinson, Navy Medicine is renewing its focus on this vital initiative, ensuring it will be able to meet the comprehensive health care and wellness needs of patients consistently and at all Navy Medicine facilities.

The implementation of Medical Home Port also demonstrates Navy Medicine's execution of case management, historically a key difference between civilian and military medicine, noted Robinson.

"We make sure we bring the medicine to the patient," said Robinson. "We don't make the patient find the medicine or the doctor. We ensure our Sailors, Marines, and their families get the right care, when and where they need it. Our Medical Home Port model is the perfect example of this philosophy."

In 2007, the first Navy Medical Home prototype was stood up at National Naval Medical Center (NNMC), Bethesda, Md. Based on the results of the pilot program, Navy Medicine began to focus on how it could adapt and adopt this concept of care across the enterprise.

Since 2009, eight initial sites have been selected at Naval Medical centers and family practice teaching hospitals to develop lessons learned and best practices with the goal of implementing throughout Navy Medicine in the coming years.

Based on the success at NNMC and the mounting evidence in the civilian sector, in Nov. 2009, the first Medical Home was established at Naval Hospital Pensacola, Fla. (NHP) encompassing 4,000 patients. The concept of care focused on enrollments, access to care, staffing needs, and facility modifications. Since then, NHP has implemented the Medical Home concept throughout all of primary care including internal medicine, pediatrics, family medicine, and multiple branch medical clinics. This has been the widest implementation of Medical Home in any one military treatment facility (MTF) to date.

"We focused on the co-location of practice," said Capt. Maureen Padden, then executive officer, NHP. "We established pods, where doctors, nurses, and Corpsmen are in the same room, facilitating cross talk - the integration of team based process. We removed brick and mortar obstacles to efficient care, went wireless, testing wireless computers and technology, optimizing the most out of our existing spaces."

NHP opened seven Medical Home teams in Nov. 2010 which now serve 22,000 patients. The seven teams consist of three teams in family medicine, two in pediatrics, and two in internal medicine. Residents are also incorporated into these Medical Home teams as part of their training in family medicine.

NHP further expanded the Medical Home Port concept to 18,300 patients at its branch medical clinics Gulfport (La.) and Millington (Tenn.), along with the Naval Air Training Center (NATTC), located at the Naval Air Station Pensacola, where 8,000 Sailors receive schooling.

"We have been able to test how Medical Home Port is relevant in not just a teaching hospital, but also at the branch medical clinics," said Padden. "Pensacola has shown successfully that you can implement Medical Home in a graduate education environment and achieve meaningful outcomes, including education in the new concept of care."

Since the implementation of the Medical Home concept, NHP has seen process improvements in care and improvements in access to care.

"Now a patient can secure a same day appointment for acute primary care and within two to three days for non urgent routine care, as opposed to seven days or longer in most practices," said Padden. "We have also seen improvements in care. There was an increase in

PENSACOLA, Fla. --Naval Hospital Pensacola Medical Home Gold Team members discuss how to use wireless computers and technology so that a patient can secure a same day appointment for acute primary care and within two to three days for non-urgent routine care. Photo by Rod Duren, NH Pensacola. (Released)

emergency room (ER) use in the past. Since Medical Home has been implemented, we have seen a leveling off of total ER utilization by our enrolled population and a focused decrease in MTF ER utilization by patients continuously enrolled to one of the Medical Homes. We hope to see additional decreases in the network in the very near future."

For the long term, NHP is looking to be in the 90th percentile in quality metrics, decrease unnecessary hospitalization, bring enrollees back into the direct care system from the network, and determine how quality can be brought to the next level, explained Padden.

"We will continue to revise the Medical Home Port concept, adjust it, and morph the model for different populations," said Padden. "The goal is to figure out what is reasonable – how many patients a provider can provide quality care to and what staffing mix will help them to be most successful. It is a balancing act."

Padden recently assumed her new position as the director of the Medical Home Port program management office at the Navy Bureau of Medicine and Surgery (BUMED), Washington, DC. The office will assist MTFs in implementing Medical Home Port through standardized training, site visits, and ongoing remote consultation.

"The immediate goal is to stand up an implementation team that can assist our MTFs with fully deploying the Medical Home Port model across Navy Medicine, "said Padden. "We will provide the expertise and the consultation to help the MTFs address the challenges they face in executing Medical Home Port. The challenges at each MTF will not be the same, they will be very different."

In addition to the individual MTFs adopting the Medical Home Port model, Navy Medicine headquarters will also aim for leveraging the expertise across all BUMED codes to align efforts in ensuring success, according to Padden.

Education will be a prime focus as the Medical Home Port model is implemented.

Educational programs such as the Clinic Management Course, Med Excellence, and others will head to support the Medical Home concept as well as the Medical Neighborhood in which Medical Home Port exists.

PENSACOLA, Fla. --Naval Hospital Pensacola Registered Nurse April Jordon [right] observes a telephone booking appointment being conducted by Adrienne Tracwick, Medical Home Blue Team booking clerk. Photo by Rod Duren, NH Pensacola. (Released)

"We will need to teach new skill sets and a new framework of measuring success in healthcare around the production of health vice the production of healthcare," said Padden. "We must focus the enterprise on a shared vision of successful healthcare in the 21st century grounded in the principles of the quadruple aim: unmatched experience of care, proactive population based health management to improve quality, controlling the inflationary costs of healthcare, while maximizing the readiness of our military and their families as we deploy forward."

Through the application of the Medical Home Port model in the future there will be several goals for improvement the Medical Home Port program management office is aiming to achieve. Such improvements include: improving access to care for patients; continuity with their assigned provider by name; patient satisfaction with the patient's healthcare experience; population based health management; provision of preventive services to maintain health; decrease ER utilization for other than urgent and emergent care; and provide better population based health decision support tools for providers on the deck plates as well as delivery of asynchronous messaging to additional sites.

The way ahead for the implementation of the Medical Home Port model throughout the Navy Medicine enterprise will encompass many facets of education, transformation, and expansion of staff, patients, and beneficiaries.

"In the next year I believe we will see an expansion of the core Medical Home Port model within our MTFs," said Padden. "We will see improved access to care for our patients and improved satisfaction with our healthcare system. I believe we will see decreased use of the ER as patients migrate back to their Patient-Centered Medical Home (PCMH) teams for routine care. I suspect we will see some sites, like Pensacola, where we are once again open for enrollment and access is good, providing opportunity for patients to return to the direct care system for their healthcare needs."

The potential of the Medical Home Port model is capable of expanding past MTFs in the future.

"I also think we will see an interest in expanding Medical Home Port to the garrison care of Marines and Sailors, including exploration of what the Medical Home concept looks like deployed forward," said Padden. "I believe we will become more standardized across Navy Medicine than we have ever been."

BUILDING THE FUTURE FORCE

Lights, Camera, Action!

Hollywood Style Special Effects Prepare Sailors for Battlefield

Marine Corps Air Ground Combat Center trainers and Corpsmen are using Hollywood-style special effects to train deploying Marines and Sailors to save lives.

Not for the squeamish, First Responder Lane Training at the Combat Center recently immersed Marines and Sailors from Combat Logistics Battalion 7, 1st Marine Logistics Group, and 3rd Battalion, 7th Marines, 1st Marine Division, Camp Pendleton, to the blood and gore of war to prepare them to react effectively in combat situations.

Marine Air Ground Task Force Training Command recruited the San Diego-based company Strategic Operations to provide their trademarked "Hyper-Realistic" touches to their Military Operations in Urban Terrain (MOUT) facilities. The realism allows Sailors and Marines to train as they fight.

TWENTY-NINE PALMS, Calif.(Jan. 27, 2011) Marines and Sailors from Combat Logistics Battalion 7, rush to the aid of simulated casualties during combat medical training conducted aboard the Marine Corps Air Ground Combat Center. The First Responders Lane training event teaches Marines to provide first aid during combat situations with a high number of casualties. (Released)

Strategic Operations brought in make-up artists and Afghan-speaking role players, some with missing limbs, to recreate the sights, sounds and smells of urban combat. They used training explosives, fake severed limbs and realistic movie-set-like structures with walls and floors covered in fake blood.

In one training scenario Marines on patrol were hit by a simulated IED. The attack resulted in four simulated casualties played by San Diego actors dressed in full battle gear. Their injuries include amputated limbs and fractures, abdominal wounds with eviscerated organs, facial burns, and penetrating wounds from searing shrapnel.

In the midst of the chaos, Marines had to run through a list of procedures, effectively communicate to secure the area and reach the downed vehicle. First responders had to provide basic treatment and prepare the injured for evacuation by aircraft, all while being subjected to explosions, the grating sounds of battle and the sounds of fellow injured Marines crying for help.

The actors, none with military or combat experience , focus on portraying their pain and shock from wounds in extreme environmental conditions ranging from freezing to 115 degrees.

"There is a plethora of injuries first responders must react to," said Lt. Col James Whiteker, head of the Logistics Training Team Division, Tactical Training & Exercise Control Group.

"These injuries are pretty much what we are seeing on the battlefield. The exposure to this and the graphic nature of the injuries is really good for Marines to see," said Whiteker.

"The corpsmen are integrated in here, too, because, depending on where they've been or what they've been exposed to, this might be the first time they've seen anything this graphic. So it's good exposure for everybody," Whiteker said.

Tactical Training & Exercise Control Group (TTECG) also uses experienced hospital corpsmen who have deployed as well as Afghan role players who can speak Pashto or Dari, to add a cultural dynamic to the training scenarios. The actors used authentic garb and operated in villages. Buildings had realistic looking facades and included furniture, curtains and signs .They looked just like those that might be seen on a movie set, or more importantly, in the combat environment.

"I didn't have this training before I deployed. But now I get to use my personal experiences from Afghanistan to help prepare the Marines and corpsmen who could be the first responders on a battlefield," said Petty Officer 3rd Class Brandon Johnson of Jackson, Tenn., a TTECG trainer.

"These Marines and corpsmen would have to assess the wounded and provide medical aid and evacuate them to an aid station or higher level of care," Johnson added.

Story and photos by Dan Barber, Robert E. Bush Naval Hospital Public Affairs

According to Pellior, "the first responder lane provides an excellent training opportunity for deploying Marines and Sailors to practice their medical skills on actual people."

The training units are specifically assessed on the following:

- Casualty Evacuation request and Military Information Support Teams reports
- The casualty movement procedures (litter carries, manual carries)
- Procedures for care given under fire
- The casualty collection point placement and its staffing
- Security
- First responder and corpsman actions with patients

The Marines and Sailors involved in the training during this cycle are from Combat Logistics Battalion 7, 1st Marine Logistics Group, and 3rd Battalion, 7th Marines, 1st Marine Division. Seven to 8,000 Marines and Sailors are on the Combat Center's ranges at any given time, according to Col. Kip Haskell, director of TTECG. The Marines and Sailors learn the most current tactics and procedures with frequent updates from units serving in Afghanistan or that have recently returned, according to Haskell.

"This is tremendous training for all concerned – and I wish we had the access and realism for the surgical teams deploying from the Medical Battalions years ago," said Capt. Michael Moeller, executive officer of Naval Hospital Twentynine Palms and former commanding officer of 2nd Medical Battalion, Combat Logistics Regiment 25, 2nd Marine Logistics Group. "But the real benefit is for the Marines and the out-of-the-wire corpsmen attached to the CLB convoys and Division corpsmen who have the greatest likelihood of managing these casualties."

Moeller was on scene to witness the training taking place near a MOUT village located several miles behind the Naval Hospital.

"There may also be significant benefit for the medical staff from the Mobile Trauma Bays Shock Trauma Platoons, and Forward Resuscitative Surgical Systems to train in this scenario-rich environment," stated Moeller. "This training may further impact the

TWENTY-NINE PALMS, Calif. (Jan. 27, 2011) Simulated casualties are brought to a casualty collection point to receive first aid treatment from Marines during a combat medical training exercise aboard the Marine Corps Air Ground Combat Center. Navy corpsmen provide advice and guidance to the Marines as they care for their wounded brothers-in-arms. (Released)

resiliency and understanding of Mild Traumatic Brain Injury and Combat Operational Stress /Post-Traumatic Stress when training is coupled with current protocols and procedures. The understanding and compliance by the small unit leadership may be as important as the implementation by medical personnel in the forward environment."

Ens. April Pratt, with the hospital's plans, operations and medical intelligence section, helps prepare other Naval Hospital staff selected for individual augmentation deployments. Observing current training like that displayed in the lane training session, keeps her well-informed of current practices for her own training sessions. "The training is perfect for the in-theater requirement. It is crucial to have Marines able to support in the event the corpsman is injured," said Pratt.

The training also teaches small unit leadership, said Whiteker. "Someone has to take charge and remain cool, calm and collected. [Someone has] to work the angles to get the helicopters in or decide how they're going to medevac these guys, because that is a very difficult thing to do, but it has to get done."

(TOP)TWENTY-NINE PALMS, Calif. (Jan. 27, 2011) Petty Officer 3rd Class Jose Tello, a medical trainer with the Combat Center's Tactical Training Exercise Control Group, supervises as makeup artists and role players prepare before a medical training exercise. The training, called First Responders Lane, teaches Marines to provide first aid to casualties when their Navy corpsmen are unavailable during combat situations. (Released)

(MIDDLE) TWENTY-NINE PALMS, Calif. (Jan. 27, 2011) Kasey Erowwhin applies the finishing touches to the moulage on role player Cesar Romero. Both are employees of Strategic Operations, a San Diego, Calif., based company that creates realism for training Marines and Sailors at the Marine Corps Air Ground Combat Center in Twentynine Palms, Calif. (Released)

(BOTTOM) TWENTY-NINE PALMS, Calif. (Jan. 27, 2011) Marines are evaluated on how they stabilize simulated casualties during a training session at the First Responders Lane training at the Marine Corps Air Ground Combat Center. (Released)

NMCP's International Medicine Program Gives Residents Unique Opportunities

Emergency Medicine Residency Training in Humanitarian Assistance and Disaster Response at the Naval Medical Center Portsmouth

As international medicine, disaster medicine, infectious disease and public global health become a global entity, military medical training must keep pace with this dynamic phenomenon and its national security implications. The Emergency Medicine Residency at the Naval Medical Center in Portsmouth (NMCP) is actively engaged in formalized international medicine training and humanitarian relief efforts through its international medicine elective program. Currently, humanitarian missions have become a focus for nation building in Iraq, Afghanistan, Haiti and elsewhere in the world where urgent humanitarian assistance is required and represent a "key judgment" in the National Intelligence Council's Strategic Implications of Global Health . NMCP's faculty and residents have traveled to the Kingdom of Bhutan, Ghana, Dominican Republic and Haiti during the three years of this international medicine elective program. These missions consistently create positive responses from the participants as well as the populations it serves. The residency is regularly invited to return.

In the Dominican Republic NMCP's international medicine program provides instruction in emergency trauma care and emergency medicine ultrasound to the newly established specialist in emergency medicine. This curriculum has become a "standard" part of the training for all Dominican emergency medicine providers.

Lt. Cmdr. Guillermo "Bill" Navarro, senior emergency medicine resident and resident coordinator of the international emergency medicine program, views this experience as mutually beneficial. "I think that novel programs spearheaded by residents such as this one exemplify the Navy's commitment to international humanitarian efforts," said Navarro. "This academic outreach effort is extremely well received and will inevitably improve the care rendered to trauma victims in the Dominican Republic."

KINGDOM OF BHUTAN (Jan. 10, 2009) Lt. Beilawski performing a health screening blood sugar on worshiper near a mosque at Eid ul-Fitr of Ramadan. Naval Medical Center Portsmouth (NMCP) spent two weeks training local medical providers in techniques that could be used in isolated areas. Photo courtesy of NMCP.

The emergency medicine program was part of the introduction of emergency medicine to the nation's medical community at the "X Congreso Nacional de Verano", Colegio Dominicano de Cirujanos in Bayahibe, Dominican Republic on July 2, 2009. NMCP participants were asked to present an emergency ultrasound course as a preconference elective and to provide one of only five emergency physicians to lecture at the conference on behalf of the Dominican emergency medicine specialty. There was a follow up invitation to provide a trauma and ultrasound course as part of the preconference curriculum and to present two lectures at the National Trauma Conference in March, 2011.

Lt. Kevin "Scott" Koehler, a second year emergency medicine resident, stated that "our international project in the Dominican Republic allows us to be ambassadors in a personally fulfilling avenue of humanitarian stewardship, whereby we can enhance the education of our peers and continue to build strong international relationships."

Additionally, the residency program and faculty regularly participate in a project with Columbia University's Mailman School of Public Health in Ghana. The most recent trip included numerous lectures and training in emergency care to community emergency providers during a month long experience.

This month long Ghanaian mission

Story by Dr. Michael D. Owens D.O. FACEP, FAAEM

KINGDOM OF BHUTAN (Jan. 10, 2009) Children near a mosque at Eid ul-Fitr investigate a sudden influx of medical providers. Naval Medical Center Portsmouth (NMCP) spent two weeks training local medical providers in techniques that could be used in isolated areas. Photo courtesy of NMCP.

"It would be impossible to recreate an experience in U.S. medicine that teaches one to maximize patient care with so few resources." - Lt. Anthony Bielawski

in a rural part of the country included a day of health screenings to over 300 worshipers on Eid ul-Fitr during Ramadan. The screening project identified numerous individuals for follow up care for malnutrition, high blood pressure, high blood sugar, vision conditions, and a variety of other unexpected ailments. The Navy group received accolades and smiles during this long day of celebration and festivities. Once again, they were so well received that they were invited back.

The participating resident was able to learn about a wide variety of medical conditions with respect to their presentation and management. The patients presented with conditions ranging from various spectrums of malaria, poisonous snake bites, toxic chemical ingestions, and significant traumas from road traffic accidents. It was not unusual to see five to ten patients at one time from a single road accident. Many people in Ghana pile into a single vehicle unbelted and become severely injured during an accident.

Lt. Anthony Bielawski, a senior resident who has a strong interest in the Navy's humanitarian efforts took advantage of the Ghana elective and felt "the experience of practicing emergency medicine in Ghana is rewarding without comparison. It would be impossible to recreate an experience in U.S. medicine that teaches one to maximize patient care with so few resources. There is no better feeling than knowing your medical efforts saved the life of a child that would otherwise have died and realizing your teachings there will carry on this benefit long after leaving."

The Navy team was continually thanked for their efforts as the knowledge, training, and ability to improvise regularly would save lives. The Kingdom of Bhutan, a small country nestled in the Himalayas between China and India, provided another unique perspective in international emergency medicine training. This was a combined effort with Dr. Jim Holliman and Cmdr. Kim Forman of the Uniformed Services University of Health Sciences. This two week experience trained primary medical providers in fundamental emergency medicine and trauma techniques that could be easily be applied to local providers in isolated areas. The Kingdom of Bhutan's minister of health honored the group by presenting the students with their graduation certificates upon course completion.

These efforts in the Kingdom of Bhutan were acknowledged in the inaugural publication Emergency Physicians International in the Summer of 2010.

The focus of this international curriculum is to train physicians in the public health and emergency medicine concepts for the nontraditional medical environment whether it is combat, humanitarian assistance, disaster relief, or other potentially austere environment. According to the Navy Medicine Strategic Plan, "the Maritime Strategy reaffirms the Navy's focus on its core capabilities of forward presence, deterrence, sea control, and power projection, expands the core capability of maritime security, and elevates humanitarian assistance and disaster response to core elements of maritime power".

NMCP Makes Impact at 6th Pan-American Regional Congress

By Rebecca A. Perron, Naval Medical Center Portsmouth Public Affairs

Naval Medical Center Portsmouth (NMCP), Va., has positioned itself to be the leading organization within the Navy and Department of Defense with regard to international military medicine through the participation in two recent international conferences.

Eight NMCP doctors and researchers recently participated in the 6th Pan-American Regional Congress on Military Medicine in Managua, Nicaragua. Prior to that, about a dozen staff members attended the NATO medical conference in Lisbon, Portugal, in September 2009.

During the two conferences, NMCP offered presentations on research in many military medical topics, came away with valuable lessons about the medical capabilities of member countries, and is prepared to offer policy-making recommendations to Navy Medicine concerning cooperation with joint and humanitarian missions with the international medical community.

The Pan-American congress is a regional component of the International Committee for Military Medicine (ICMM) and was held Nov. 29 - Dec. 2, 2010. The international committee consists of more than 100 countries and facilitates military medicine collaboration and advances common goals.

The ICMM's main objective is to ensure that medical services throughout the world can work together and use similar practices during operations involving international cooperation. The five regional congresses work toward this goal by sharing scientific and technical experience, developing contacts with the scientific community and by promoting regional events, such as the regional congress held in 2010.

The trip to Nicaragua gave NMCP substantial positive visibility within the Latin American community. Although others were there representing American organizations, NMCP provided the only Department of Defense-organized command delegation and gave the majority of the United States' presentations.

The four-day agenda included events to facilitate interaction and cultural exchange between the 128 delegates from 21 nations. The major theme of the event was humanitarian disaster relief and was focused on improving the capability of support to joint theater operations in the case of regional crises. The wide range of topics also covered disaster preparedness, civilian peacetime health care and other military medical topics.

"By attending the congress, we had an opportunity to get together to share ideas on military medicine," said Cmdr. Peter Roberts, director for Surgical Services. "We were also able to improve relations with the Latin American countries who were participating."

Improving relations with Latin American countries is of growing strategic interest as the U. S. is becoming more involved in humanitarian relief missions in the region. U.S. Southern Command, which is responsible for all U.S. military activities in South and Central America, encouraged participation in the event and helped coordinate NMCP's attendance.

"Participation in international academic meetings provides yet another dimension to our ongoing engagement with theater partners," said Rear Adm. Alton L. Stocks, NMCP's commander. "For this SOUTHCOM sponsored event, our researchers had a unique opportunity to meet with their counterparts from a number of Latin American and South American countries, building bridges through their common interest in scholarly medical pursuits."

Members of the delegation also had the opportunity to interact with their professional counterparts from the other nations. The cultural and scientific exchange meant NMCP's delegation met with flag and very senior level personnel from other countries. Most did not speak English, so the translator was key in enabling the exchange.

"The host countries really do appreciate our presence, since they view us as colleagues and we like to share ideas and systems that work for us," Roberts said. "They have good information as well, and it's important for us to see what they can do with their limited resources. By seeing and understanding their capabilities, it will help us understand how to proceed with treatment during a humanitarian mission.

"We now better understand what their standard of care is, and when we are involved in humanitarian assistance, then we would provide a similar standard," Roberts continued. "Therefore, we would not prescribe a course of treatment that cannot be maintained locally. So this visit gives Navy Medicine insight for strategies for future humanitarian assistance."

MANAGUA, NICARAGUA (Dec. 2, 2010) Cmdr. Timothy Clenney, Associate Director for Professional Education and the leader of NMCP's delegation, receives a certificate of appreciation for his lecture on "Traumatic Brain Injury and Vertigo" from the session moderator during the 6th Pan-American Regional Congress on Military Medicine in Managua, Nicaragua. Photo by Rebecca A. Perron. (Released)

IA Training Gives Bremerton Chaplain Valuable Experience

Story By Douglas H Stutz, Naval Hospital Bremerton Public Affairs

Cmdr. George Mendes, head of the Naval Hospital Bremerton, Wash., Pastoral Care Department, recently attended the Navy's Individual Augmentee (IA) combat training as an embedded alternate for the Navy chaplain billet at the NATO Level III Hospital in Kandahar, Afghanistan. The primary chaplain billet slot was assigned to Lt. Cmdr. Andrew Sholtes, Naval Medical Center San Diego, Calif.

Every Navy Military Treatment Facility has a chaplain on staff and the same manning responsibility also holds true for deployments.

"Our medical staff cares for the body and the chaplains tend to the soul," explained Mendes. "When persons have health issues that require some degree of medical treatment, especially inpatient, they may feel confused, restless, and afraid. Being a patient at a hospital can make patients feel profoundly vulnerable and often significant spiritual issues emerge. Through sensitive pastoral care, chaplains contribute to the treatment of the whole person by attending compassionately to his/her moral and spiritual concerns."

As Navy chaplains undergoing IA combat training, Mendes and Sholtes were unique. Under the Geneva Convention, a chaplain is a non-combatant (Protocol I, 8 June 1977, Art 43.2). Consequently, Mendes and Sholtes were the only ones who did not train with a weapon. "A lot of people don't realize that chaplains are non-combatants," said Mendes. "As soon as any chaplain picks up a weapon, they lose their non-combatant status. A chaplain is not a warrior, per se. I really wanted the others there to see and know that a chaplain has unique tasks, such as providing moral and spiritual support."

Although Mendes didn't engage in basic combat skills training or any weapon familiarization drills, he was active in many of the others offered, including combat first aid training. The first aid training provided vital hands-on experience and covered a wide range of necessary battlefield trauma topics, including evaluating a casualty, preventing/controlling shock, treating a bleeding and/or severed extremity, treating an open abdominal wound, treating an open head wound, treating an open chest wound, how to request a Medical Evacuation (MEDEVAC), how to transport a casualty and becoming familiar with the Improved First Aid Kit (IFAK).

"The combat first aid was very valuable," Mendes commented. "Just knowing how to evaluate a casualty in such a setting, how to use and when to use a tourniquet, how to stop bleeding, and dealing with a wound and getting the casualty as stabilized as possible were all vital learning tools for everyone."

Mendes joined other IA Sailors at Fort Jackson/ McCrady Training Center, S.C. for their approximately month-long Navy IA combat training, which is led by Army drill instructors with Task Force Marshall. The Expeditionary Combat Readiness Center (ECRC) Navy Liaison Office (LNO) at Fort Jackson/MTC provides Navy oversight and coordination in the training process. Although Mendes was an alternate, he was tasked with training right alongside with Sholtes.

"To ensure a seamless turnover is made, both the primary and alternate need to attend training together," said Mendes. "Even though I didn't continue on down-range this time around, it still was as challenging for me as it was for others. There was stress for my wife and me. I departed for training two weeks after our third child was just born and I wasn't able to be there for support, especially during the post-partum time period. So that was hard emotionally, but I knew I certainly wasn't the only one away from loved ones."

Mendes attests that even though he didn't head down-range after his training was over, his time spent in temporary duty status at the Navy Combat Training Course was well spent. He came away with a better understanding of everything that happens behind the scenes to prepare Individual Augmentees for the battlefield environment.

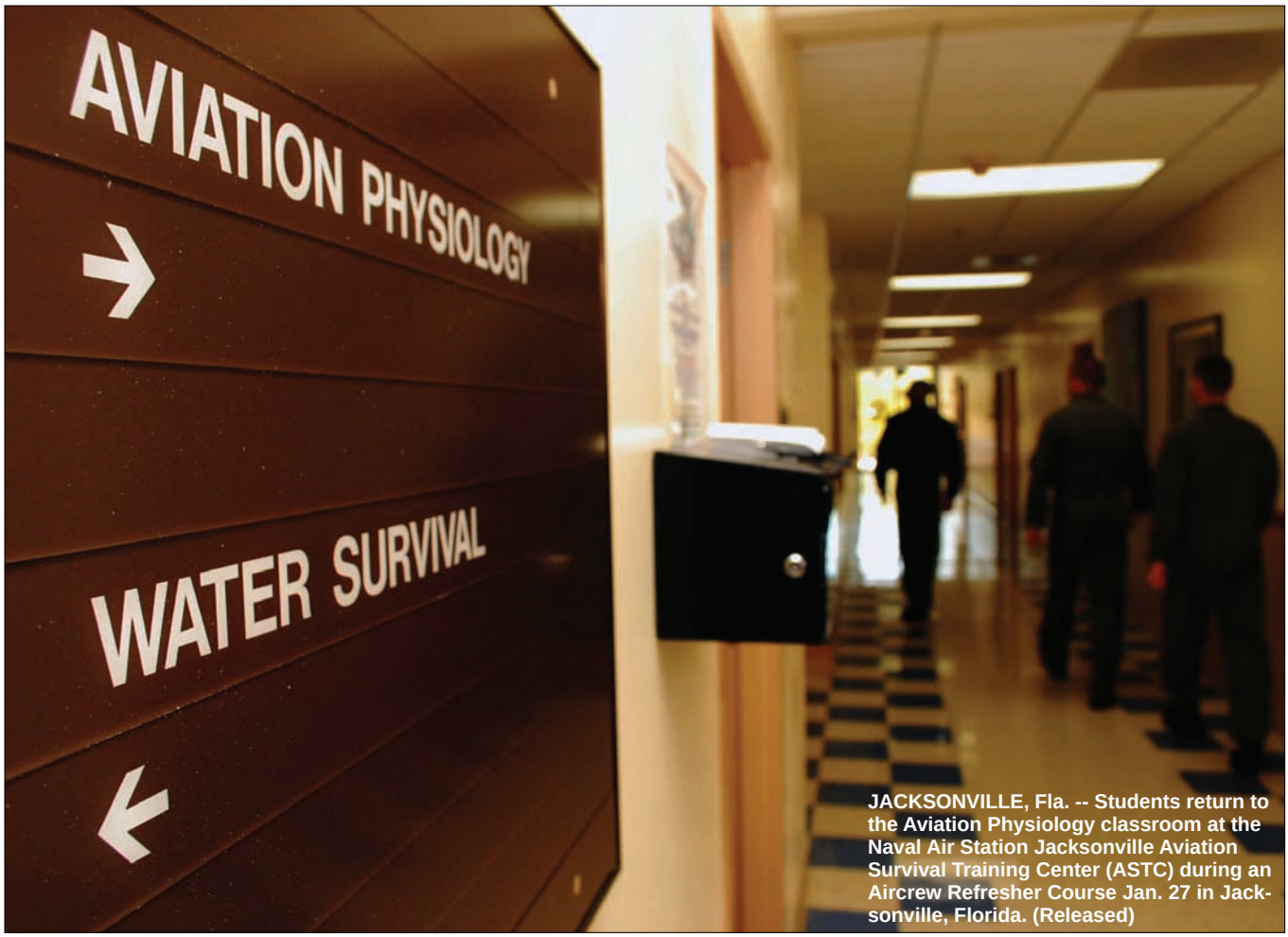
"I now have a whole different level of situational awareness," said Mendes. "I have been through the training, and observed and felt what we all deal with during that training with the very human element of unfinished and unresolved emotions and mixed feelings. I can use my experience at the training to focus on our pre-deployment training at NHB to at least help others with their spiritual preparation."

Prior to being assigned to Bureau of Medicine and Surgery chaplain billets, many chaplains undergo Duty Under Instruction (DUIN) for a year in a Pastoral Care Residency (PCR) which is accredited by the Association of Clinical Pastoral Education. This training differs from a standard seminary program in that the chaplain learns clinical pastoral skills experientially. By interacting with patients as 'living human documents,' chaplains are able to appreciate each patient's unique presenting spiritual concerns.

MCCRADY TRAINIING CENTER, S.C. (Nov. 11, 2010) (From L) Lt. Cmdr. Andrew Sholtes, Naval Medical Center San Diego Chaplain, and Cmdr. George Mendes, Naval Hospital Bremerton Chaplain, pause for a photo opportunity during their Individual Augmentee Combat Training preparing for deployment to the NATO Level III hospital at Kandahar, Afghanistan. (photo courtesy of Cmdr. George Mendes)

BUILDING THE FUTURE FORCE

JACKSONVILLE, Fla. -- Senior Chief Naval Air Crewman (AW/SW/NAC) Brantley Lowe (rear), a Chester, S.C. native, serves as a safety observer, watching a student during hoist exercises during the Aviation Survival Training Center's (ASTC) Aircrew Refresher Course Jan. 27 in Jacksonville, Florida. The ASTC provides courses for naval aircrew personnel, and operates under the aegis of Navy Medicine Support Command. (Released)



JACKSONVILLE, Fla. -- Students return to the Aviation Physiology classroom at the Naval Air Station Jacksonville Aviation Survival Training Center (ASTC) during an Aircrew Refresher Course Jan. 27 in Jacksonville, Florida. (Released)

The 20-plus officer and enlisted Sailors, and three civilian employees assigned to the Naval Air Station (NAS) Jacksonville Aviation Survival Training Center (ASTC JAX) have the single purpose of ensuring aviators from U.S. and allied installations around the world are prepared for what could happen.

"As part of the Naval Aviation Survival Training Program (NASTP), ASTC Jacksonville is a force enabler," said Lt. Cmdr. Leslie Kindling, ASTC Jacksonville director and an aerospace/operational physiologist. "Our mission is to assist the warfighter in winning the fight, to prevent losses due to mishaps and hostilities, and ensure survival in the event of a mishap or hostility."

Navy Medicine Support Command has oversight of ASTC Jacksonville via Navy Medicine Manpower, Personnel, Training and Education Command (NMMPT&E) at Bethesda, Md., and the Naval Operational Medical Institute (NOMI) in Pensacola, Fla. ASTC JAX is one of eight ASTCs, all operating directly under the Naval Survival Training Institute (NSTI), a NOMI subordinate activity in Pensacola. ASTC JAX facilitates aviation survival training as a subject-matter expert on all military operational medicine, providing aviation survival and safety training for Navy and Marine Corps aviation personnel and supporting all Department of Defense activities.

ASTC trains more than 1,200 officer and enlisted students annually using classroom lectures, simulator devices and a curriculum emphasizing hands-on exposure to survival skills.

"Our primary purpose is to maintain fleet readiness and enhance aircrew survivability through aviation survival training to fleet aviation, ground forces and joint service aircrew," said Kindling. "We advance Naval Aviation survival through education and training."

Kindling said that courses offered through ASTC Jacksonville to officer and enlisted Sailors and Marines include initial aircrew training; refresher aircrew training, the course most commonly offered at ASTC Jacksonville; non-aircrew training; and non-aircraft specific training.

"Aircrew must complete the training every four years to maintain their flight status," Kindling said. "This is the operational readiness part of what we do. Force preservation is supported first by training aircrew to respond to physiological threats which, if left untreated, could result in mishaps. Force preservation is again addressed

JACKSONVILLE, Fla. -- Navy Diver 2nd Class Christopher Tuschl, a Monroe, Ga., native, tightens the straps of a MARK 20 underwater breathing apparatus before students enter the pool during an Aviation Survival Training Center (ASTC) Aircrew Refresher Course Jan. 27 in Jacksonville, Fla. (Released)

JACKSONVILLE, Fla. --Senior Chief Naval Air Crewman - R (AW/SW/NAC) Brantley Lowe (rear), a Chester, S.C. native, serves as a safety observer, watching a student fasten a rescue hook to the hoist during a practical section of the Aviation Survival Training Center's (ASTC) Aircrew Refresher Course Jan. 27 in Jacksonville, Fla. (Released)

JACKSONVILLE, Fla. -- Navy Diver 2nd Class Adam Malans, an Orlando native, signals to observers the 9D6 dunker, a device simulating an aircraft water landing from which students must evacuate, is clear during an Aviation Survival Training Center's (ASTC) Aircrew Refresher Course Jan. 27 in Jacksonville, Fla. The ASTC provides courses for naval aircrew personnel, and operates under the aegis of Navy Medicine Support Command. (Released)

by training aircrew on post-mishap procedures, which improve their survivability."

Classroom lectures center around physiology and aeromedical issues, necessitating the presence of the three Medical Service Corps aviation physiologists and eight hospital corpsmen (HM) with the Navy enlisted classification Code 8409 - aerospace physiology technician. Classes in altitude physiology, sensory physiology and situational awareness, acceleration physiology, and other flight- and medical-related issues are generally precursors to the hands-on practicum.

Kindling said the practical application of some of the devices ASTC Jacksonville personnel use during training, including the low pressure

JACKSONVILLE, Fla.-- Aircrew Survival Equipmentman 2nd Class (AW) Class Alex Medellin (right) makes final adjustments to a student's gear during an Aviation Survival Training Center (ASTC) Aircrew Refresher Course Jan. 27 in Jacksonville, Fla. (Released)

JACKSONVILLE, Fla. -- Members of the Aviation Survival Training Center's (ASTC) Aircrew Refresher Course assume the help huddle position for water survival during a training scenario Jan. 27 in Jacksonville, Fla. The ASTC provides courses for naval aircrew personnel, and operates under the aegis of Navy Medicine Support Command. (Released)

chamber and the reduced oxygen breathing device (RODB), can provide a realistic overview to situations that naval aviators might face.

"With these we can allow the student to feel the effects of hypoxia, one of the most common hazards in the TACAIR (tactical air operations) community," she said. "This training allows crews to experience the signs of hypoxia so it will be easier for them to recognize the same signs in the aircraft. Easier recognition leads to quicker response and better survivability."

Kindling said the center's ejection seat trainer and virtual reality parachute descent trainer also provide real-time experience for aviation crew members. She said ASTC Jacksonville's $1 million two-year-old modular egress trainer, a device designed to simulate an aircraft involved in a water

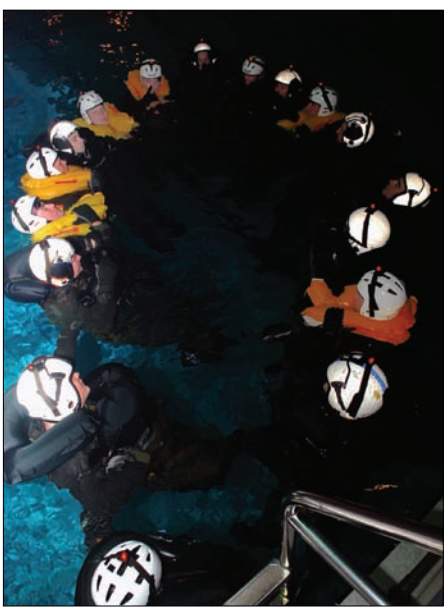
JACKSONVILLE, Fla. -- Naval Air Crewman - R (NAC) 2nd Class Robert Thorpe (left), a Cleveland native, rotates the Modular Shallow Water Egress Trainer, a device designed to familiarize students with evacuation techniques in the event of a water landing, during an Aviation Survival Training Center's (ASTC) Aircrew Refresher Course Jan. 27 in Jacksonville, Fla. (Released)

JACKSONVILLE, Fla. -- Naval Air Crewman - R (NAC) 2nd Class Robert Thorpe (left), a Cleveland native, assists students into the 9D6 dunker, a device simulating an aircraft water landing from which students must evacuate, during an Aviation Survival Training Center's (ASTC) Aircrew Refresher Course Jan. 27. (Released)

JACKSONVILLE, Fla. -- Aerospace/Operational Physiologist Lt. Cmdr. Leslie Kindling (MSC) (left), the Officer-in-Charge of the Naval Air Station Jacksonville Aviation Survival Training Center (ASTC), serves as the Low Pressure Chamber Chief Observer while Aircrew Survival Equipmentman 2nd Class (AW) Class Alex Medellin (right) records activities during an hypoxia demonstration during the ASTC's Aircrew Refresher Course Jan. 27. (Released)

JACKSONVILLE, Fla. -- Students don oxygen breathing equipment during an hypoxia demonstration in the Naval Air Station Jacksonville Aviation Survival Training Center's (ASTC) Low Pressure Chamber during an Aircrew Refresher Course Jan. 27 (Released)

JACKSONVILLE, Fla. -- Members of the Aviation Survival Training Center's (ASTC) Aircrew Refresher Course assume the help huddle position for water survival during a training scenario Jan. 27 in Jacksonville, Fla. (Released)



mishap that aviators must evacuate, is also of critical importance.

"Many students have indicated that of the ASTCs at which they have received training, ASTC JAX is by far the best," she said, crediting the 19 active-duty enlisted Sailors and three civil service employees. "Without a doubt the credit for our success goes to the motivated, knowledgeable, and professional Sailors and civilian instructors we have on staff."

Along with the ND and HM presence at the training center, other aviation rates, including aviation warfare systems operator (aircrew), aviation structural mechanic - safety equipment, and aircrew survival equipmentmen are also involved in the ASTC Jacksonville day-to-day operations. The ASTC's senior enlisted advisor (SEA) commended the teamwork, professionalism and knowledge of the instructor Sailors, equipment maintenance personnel and safety observers.

"These Sailors are tasked with one of the most difficult jobs – preparing for something we all hope never happens," said Senior Chief Naval Aircrewman Helicopter Rescue Swimmer (SW/AW/NAC) Brantley Lowe, ASTC Jacksonville SEA. "They keep the students trained and ready, and they do their job well. Without their expertise and practical knowledge, people could get hurt or even die."

Landstuhl Deployed Warrior Care Center a Vital Stop for Casualties

Landstuhl Regional Medical Center (LRMC) has been one of the premier medical treatment facility (MTFs) in the DoD organization since 1953, and is the largest MTF outside the U.S. The U.S. Army-run facility treats over 10,000 patients a year and is designed to serve as a nexus for the critically injured coming from the European, African and Central Command theaters. Because of its strategic location and world-class comprehensive care, LRMC is a wounded warrior's first stop for level IV military healthcare services and functions as the only US-standard level II trauma center located overseas.

During the initial phases of Operation Enduring Freedom (OEF) the Army experienced an influx of casualties into Landstuhl, which required further follow-on movement to either return-to-duty (RTD) status or transfer-for-continual care (TCC) to other MTFs throughout the United States. A medical coordination site had to be established to deal with the patients that needed to be regulated and to help stabilize the LRMC mission.

The Deployed Warrior Medical Management Center (DWMMC) was created to combine capabilities in medical triage and air evacuation as well as to serve as an off-shoot for specific patient administrative functions not normal in common-hospital operations. This unique patient management system proved to be invaluable and became an integral part in LRMC business practice, but with the increased operational tempo in both Iraq and Afghanistan, the Army began to seek outside service to help sustain the DWMMC.

The Navy Reserve first took over manning of the DWMMC in 2006 to help lessen the strain in its yearly-required rotational backfill. Today, the DWMMC workforce has evolved into a combination of personnel from all U.S. military branches as well as civilian and contract staff. The DWMMC, which started out as a hodgepodge of medical management pieces, has developed into a one-of-a-kind center of excellence whose primary mission is to facilitate the evacuation of wounded warriors and facilitate their entry into the military healthcare system.

"The DWMMC is a Navy-centric mission that organizes the medical needs of the Wounded Warrior and packages the 'chaos' to stability to ensure the proper disposition of the patient," said Col. John M. Cho, current commander of the LRMC. "The reason why it works well is because of its personnel and leadership."

The DWMMC has 10 divisions of labor that synchronize into a standalone 24/7 operation: Mission Ops, Triage Clinical Nurse Coordinator, CAC/ID Cards, Material Handling, Nurse Case Management, DWMMC Clinic, Air Evacuation Clinical Nurse Coordinator, Air Evacuation, Movement & Orders, and Leadership.

LANDSTUHL, GERMANY – Medical Personnel from multiple services receive incoming casualties at the Landstuhl Regional Medical Center (LRMC). LRMC is the first stop for casualties from Iraq and Afghanistan for level IV military healthcare services and functions as the only US-standard level II trauma center located overseas. Photo courtesy of LRMC. (Released)

LANDSTUHL, GERMANY – Landstuhl Regional Medical Center (LRMC) has been one of the premier medical treatment facility (MTFs) in the DoD organization since 1953, and is the largest MTF outside the U.S. Photo courtesy of LRMC. (Released)

Cmdr. David P. Murphy is the current Officer-in-Charge (OIC) of the DWMMC and is the only active duty member in a predominantly Navy Reservist environment. As a trained pulmonologist, Dr. Murphy applies much of his medical skills in the management of the DWMMC.

"I think the best way to look at the DWMMC is to see it as a noble mission in caring for America's treasure: the Soldier, the Airman, the Sailor, and the Marine that put their lives on the line in pursuit of a better life for people in the future," said Murphy. "So when our treasure gets injured, it's our job to ensure that they get the best possible chance of making the best recovery."

"The first time I got here, when the first buses arrived, it was extremely humbling," added Murphy. "I call it 'controlled chaos' or 'a series of organized mass casualties' on a daily basis. It's impressive to watch… Army, Marines, Navy, Air Force & civilians coming together to meet these buses to take care of the injured. It's seamless."

The DWMMC acts as an important conduit to help identify significant medical conditions such as Traumatic Brain Injury (TBI), the need for malaria prophylaxis and behavioral health issues. It also facilitates medicine reconciliations and works in unison with providers and patient-transport regulators to achieve the best interests of the patient.

Since its beginning, the DWMMC has played a major role in air evacuating over 9,000 patients out of Ramstein Air Base. Occasionally, a unique chance to perform a special humanitarian act by escorting a patient back to CONUS can be arranged through the DWMMC.

Such an opportunity presented itself when an injured Marine was in need of an attendant and HMC (SW) Aimee Arnold answered the call.

Arnold is a Navy veteran of 21 years and she admired the precision of the system. "It's very systematic. They know exactly where each patient and escort will be placed."

Once airborne, patients take comfort in the fact that they are passengers in the most advanced medical-transport aircraft along with a highly-trained staff that is prepared for anything.

"We had an in-flight emergency" recalled Arnold. "I was helping a patient that went into severe respiratory distress. The response of the aircrew was truly impressive. They were miracle workers… just totally amazing!"

"I shifted gears to help calm down the other patients because they were on litters trying to look behind them to see what was happening," she added. "One guy looked me right in the eye and asked, 'Is my buddy going to die?' It totally touched my heart strings. I replied, 'No, he's in the best care ever'. I still get choked-up thinking about his terrified look as it was happening. I eventually felt better after seeing those young faces come to a sense of relief once they knew that everything was under control."

"The unique thing about LRMC is it really shows that a multi-service system can and does work… all coming together in symphony… all working for one common goal," noted Murphy. "I think the DWMMC is a model program that can be used elsewhere. It would particularly be beneficial in a place such as the National Capitol Region."

The Deployed Warrior Medical Management Center represents a vital component in the Department of Defense medical architecture. Whether the U.S. Navy continues to support this mission or decides to execute a concept of this elsewhere, still remains to be seen. Either way, both LRMC and the DWMMC will continue to serve as key medical platforms in support of our national security strategy.

LANDSTUHL, GERMANY – Cmdr. David P. Murphy, the current Officer-in-Charge of the Deployed Warrior Medical Management Center, conducts training at the Landstuhl Regional Medical Center (LRMC). Murphy is the only active duty member in a predominantly Navy Reservist environment. Photo courtesy of LRMC. (Released)

NNMC Colon Health Making Strides Locally, Nationally

For years, the National Naval Medical Center (NNMC) has lead the way in colon health, promoting early screening to prevent colon cancer – the second leading cause of cancer death in the U.S. – and offering a full range of services to meet the needs of all beneficiaries.

According to Dr. Brooks Cash, integrated chief of medicine for the future Walter Reed National Military Medical Center, when it comes to the most-cutting edge technology, patients at NNMC can undergo the virtual colonoscopy (VC), a CAT scan technique that uses modeling software to produce realistic 2- and 3-D images of the colon.

"The virtual colonoscopy test was developed about 15 years ago and has been refined over the last 10 years, primarily here [at NNMC] as well as several other institutions throughout the country," said Cash. He noted that NNMC has performed over 10,000 virtual colonoscopies since 2004.

NNMC patients can also opt for an optical colonoscopy (OC), during which the patient is sedated and a scope is used to find and remove polyps. A precursor to colon cancer, polyps arise from the wall of the colon.

According to Dr. Duncan Barlow, senior radiologist for the Colon Health Initiative at NNMC the OC is considered the "gold standard" and involves removing polyps on the spot. Once a polyp is removed, he added, it will no longer cause cancer.

If a polyp is found during a VC, the patient should then have a colonoscopy to have it removed, he said.

"There have been multiple studies that have shown the virtual colonoscopy is as accurate as colonoscopy for identifying polyps a centimeter [in diameter] or greater, and these are the polyps that are most likely to progress to colon cancer if undetected," said Cash. "Our data from NNMC is even better, showing diagnostic equivalence for even smaller polyps."

While the VC normally takes about 15 minutes, the OC can last about an hour.

"Certainly, there are advantages and disadvantages to both [procedures], but we see them both as standard of care and more complimentary than competitive," said Cash.

Compared to the OC, the VC is also less invasive, as it involves inserting a small tube inside the rectum to fill the colon with carbon dioxide during the 2- and 3-D imaging.

"We have this great technology that allows us to build a model of the colon without invading the patient's body," said Barlow.

Of course, the technology does no one any good if patients fail to use it. "Colon cancer is the third most common cancer, but the second most common killer [among cancers]," said Barlow. To help reverse those numbers, he said, it's important to raise awareness about screening and prevention.

Amongst Americans eligible for colon cancer screening only about 50 percent actually get some form of screening, said Cash. Men and women ages 50 and over, and African Americans ages 45 and over are typically eligible for screening. NNMC's Gastroenterology (GI) Service is working to correct this trend and is making strides in getting patients to comply with colon cancer screening.

"Here at Bethesda, as well as in the Navy, our compliance rates for colon cancer screening are approaching 70 percent among our enrolled population. When you include the virtual colonoscopy here at NNMC, it approaches 90 percent," said Cash.

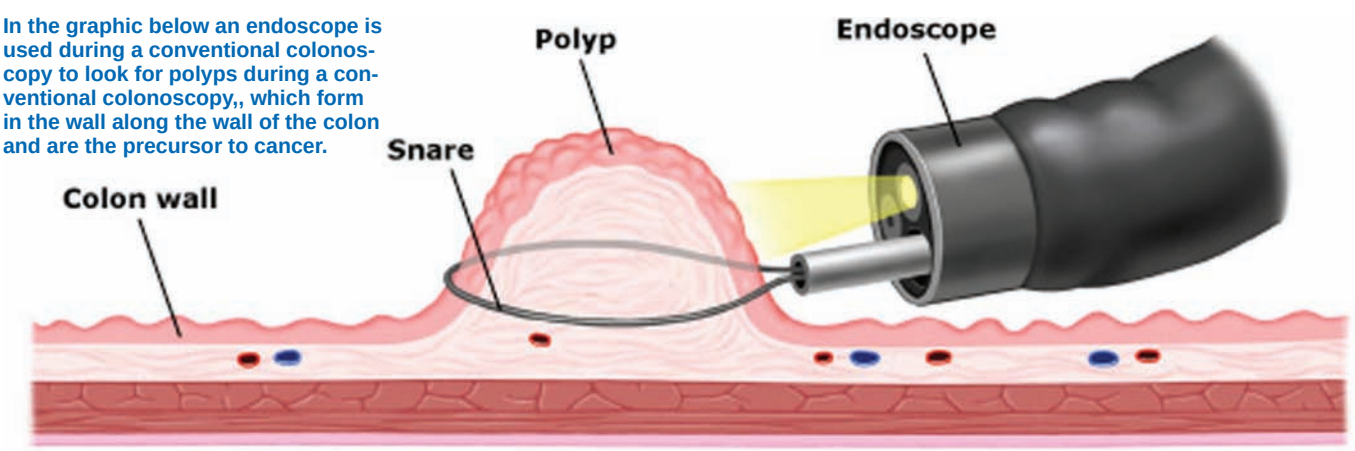
Cash and his colleagues recently surveyed their patients to learn what lead them to choose one method of screening over another.

The survey showed that while some patients prefer to be sedated during the OC, others do not like to be put under because they'd prefer not to miss work or arrange someone to drive them home..

"It's quite clear [patients] appreciate the convenience [of the VC]," said Cash. "About 30 percent said they would not have undergone screening had it not been for virtual colonoscopy. What that tells us is that we're bringing people off the sidelines. We're finding those polyps that would have otherwise gone undetected and, by removing them, we're preventing colon cancer. We're thrilled about that."

Martin Heller, the 10,000th patient to undergo a VC at NNMC, underwent the procedure Jan. 20 – it was his first colon cancer screening. The next day, he

In the graphic below an endoscope is used during a conventional colonoscopy to look for polyps during a conventional colonoscopy,, which form in the wall along the wall of the colon and are the precursor to cancer.



BETHESDA, Md. Dr. Duncan Barlow, senior radiologist for the Colon Health Initiative at the National Naval Medical Center, examines a virtual colonoscopy, which captures 2- and 3-D images of the colon to detect polyps, which arise from the wall of the colon and are the precursor to cancer. (Released)

learned his results were clear.

Heller, who retired from the Air Force, said he appreciated the convenience of the VC.

"The procedure itself was pretty painless," said Heller. "There's a little bit of discomfort, but nothing more than the feeling of having done a ton of sit-ups. You truly feel nothing ... It was really a non-event. All I had to do was just lie there."

Prior to the exam, he said, he felt well-instructed on how to prepare.

Heller said he was impressed by the ease of access.

"I was discussing with my doctor that I was due for a colonoscopy, and so he sent me here to Bethesda," he said. "It was time for me to have one, and it was really easy."

Established in 2003, the Colon Health Initiative works to promote the importance of early detection and to create a premier model colon cancer center.

Striving to provide the best care, NNMC's GI Service counsels each patient to determine which screening is best for the individual, taking into account their family history or any pre-existing medical conditions, said Cathy Dykes, senior nurse research coordinator for the Colon Health Initiative at NNMC.

"It's really a programmatic approach. Once we get folks into our system, we assume the responsibility of calling people to come back when it's time for their [next] screening procedure and we send them home with hard copies of their results," said Dykes.

The GI service has also started a new system to allow patients to learn results of their visit. Dialing into a secure system, using a pin number issued to the patient, they can listen to a message from their doctor informing them of the outcome of their visit, be it a colonoscopy or VC.

Using emerging technologies for preventing colon cancer, the Colon Health Initiative also seeks to continue pioneering research in the field.

Dykes said the GI service informs patients of research they're conducting that they may be eligible to partake in. In the late 1990s, the GI service at NNMC published ground-breaking research on colonoscopies in women. At the time, said Cash, there was not much supporting data for colonoscopy screening in women. He noted that this research confirmed that men and women are at the same lifetime risk for developing colon cancer, though men tend to develop colon cancer at an earlier age.

There had been a number of studies on colonoscopies in men; therefore, they chose to look at colonoscopies in women.

"We found that [colonoscopies are] just as important in women as men," he said.

Most recently, the clinic has been working on a study examining the findings of VC procedures in patients over the age of 65.

"We hope that our findings will have national implications, in that the Centers for Medicare will re-evaluate the decision regarding coverage of virtual colonoscopy [for patients over 65]," he said.

The GI service is also making strides in widening the availability of their expertise. While there aren't many service members in the Navy trained to conduct colonoscopies, Cash said the GI service is planning to enhance the capabilities amongst smaller military treatment facilities.

"There are only about 20 gastroenterologists in the Navy," said Cash, who noted that many are stationed at teaching hospitals. "There's a lot of demand -- just about everybody has a colon and is therefore at risk of developing colon cancer."

To increase screening access, NNMC has initiated a teleradiology project over the past few months, whereby other hospitals, such as Naval Hospital Jacksonville, in Florida, can conduct virtual colonoscopies and send the images electronically to NNMC to radiologists who will interpret the studies, then send the results back.

"We're looking to try and expand that to other smaller hospitals throughout DoD that might not have gastroenterologists onboard," said Cash.

Studies have shown that avoiding obesity, smoking and red meat can lower the risks of colon cancer, he said.

"The most important thing people can do to reduce their risk is get screened for colon cancer," he said. "All those lifestyle modifications can reduce their risk very slightly over 20 or 30 years, but getting a good screening examination is worth a lot more."

Patients do not need a referral to come in for screening at NNMC.

"All they have to do is call us," said Dykes.

For more information on the Colon Health Initiative at NNMC, call 301-319-8284.

BUILDING THE FUTURE FORCE

Preparing For What-Ifs

NEMTI trains providers, support personnel for combat support and EMF deployments

Preparing Navy Medicine providers, Hospital Corpsmen and non-medical support personnel for the unexpected events of an Expeditionary Medical Facility (EMF) and combat environments is job-one for the Naval Expeditionary Medical Training Institute (NEMTI), located at Marine Corps Base Camp Pendleton, Calif.

NEMTI trains and equips personnel for a variety of unit deployments, like the LIMA Detachment preparing to support EMF Kuwait.

"Our mission is to organize, equip, and train personnel to provide medical support to the expeditionary medical facility in Kuwait and other remote and austere combat environments, in support of Overseas Contingency Operations," said Cmdr. Ethan Josiah, NEMTI Deputy Officer in Charge (OIC).

NEMTI training combines classroom lectures with hands-on practical and scenario-based training to prepare personnel for forward deployment.

"This three-week training program is comprised of courses such as Land Navigation, Combat and Operational Stress, Rules of Engagement, Basic Radio Communications, Language Familiarization and Cultural Awareness, Tactical Combat Casualty Care (TCCC), and 9 mm Live Fire Qualifications," Josiah said.

NEMTI trained 150-plus personnel in its most recent class, the Lima Detachment, Jan. 31 – Feb. 18. Josiah said Lima will likely be the last Navy detachment to man EMF Kuwait as it is being turned over to the Army later in the year. Lima is the 12th detachment to deploy to EMF Kuwait and is comprised of personnel from 15 commands. This makes team building a critical component of the NEMTI mission.

"We provide a learning environment where personnel train, eat, and are housed together, and where unit cohesion and team building can begin," Josiah said.

Team building and versatility are NEMTI's most valuable assets, said Hospital Corpsman 2nd Class (FMF) John Bringuel, a NEMTI instructor who has deployed to both Iraq and Afghanistan. "We are able to train Sailors to accomplish missions across the globe, whether it takes place in a tactical environment or on a routine humanitarian operation," he said.

Key to successful learning and team building is the student leadership, said Capt. Thomas Sawyer, NEMTI OIC. The daily operations of the LIMA Detachment were managed by Capt. Michael Ashe, student OIC, and Master Chief Hospital Corpsman Dana Goodwin, student senior enlisted adviser.

"The LIMA Detachment is extremely motivated and has come together quickly as a team of providers and skilled technicians," Sawyer said. "I'm impressed with this group of professionals as they have responded positively to our program. I am confident they will continue Navy Medicine's Role 3 mission."

Lt. Marissa Taylor, a physical therapist at Naval Hospital Camp Lejeune, N.C., who attended NEMTI training and will deploy with the Lima Detachment, said she will be better prepared after NEMTI training. "I have never been exposed to many of these situations or scenarios," Taylor said. Though I don't intend on being a subject-matter expert on each topic covered, I do feel more comfortable with my role and my reactions if faced with adverse situations that could potentially cause me or my shipmates harm while on deployment."

NEMTI living conditions exposed Taylor and her fellow students to a common deployment scenario – the field environment. Students sleep in sleeping

CAMP PENDLETON, Calif. (Apr. 14, 2010) A student drags a simulated casualty through heavy smoke and grime in a simulated battlefield scenario, during Tactical Combat Casualty Care Final Exercises (FINEX) at the Naval Expeditionary Medical Training Institute. Photo by IC1 Chad M. Henry. (Released)

bags in open bay "huts" that have no heating or air conditioning. There is sporadic WI-FI access, and restrooms and showers are group facilities, as is the dining facility.

"I believe the living conditions at NEMTI are preparing us for conditions we may be exposed to in other countries," said Hospitalman Earlyn Beall, a dental technician at the Federal Health Care Center (FHCC) at Great Lakes, Ill., who attended NEMTI training and will deploy with the Lima Detachment. "Having grown up in the Philippines for a few years, these conditions are nothing new, except for the cold at night. The training we are being given here is definitely allowing us to learn and better practice the skills we need for deployment."

NEMTI also trains students to defend themselves and their patients, teaching them to use the Beretta 9 mm service pistol and the M-4 service rifle.

"The weapons training we provide here at NEMTI is vital for survivability as it was for me when I deployed," said Construction Mechanic 2nd Class (SCW) Alan Tlaxcala, a Navy Seabee and NEMTI instructor who deployed with the 1st Marine Expeditionary Force for seven months in 2007 to the Al Anbar Province in Iraq. "The Laws of Armed Conflict and Rules of Engagement that we teach here are essential for the students to learn and know when to use their weapons."

CAMP PENDLETON, Calif. (Jan. 10, 2010) LIMA Detachment personnel augment Camp Pendleton Marines during Convoy Operations training Exercises at the Naval Expeditionary Medical Training Institute. Photo by IC1 Chad M. Henry. (Released)

NEMTI's Indoor Simulated Marksmanship Trainer or ISMT, is critical to the weapons training program. The ISMT incorporates an electronic weapons trainer that uses modified 9mm service pistols with pneumatic recoil capabilities that provide the user with the realism and expectations of the reflexive fire requirements of the Navy's weapons qualification course. Over 95% percent of those who attended qualified on the Beretta 9mm weapon.

NEMTI's location on Marine Corps Base, Camp Pendleton allows for the staff to capitalize on the training expertise and resources of this base. Utilizing the Fifth Marine Regiment Motor Transport Division for tactical vehicles, the students were able to be embedded in a convoy equipped with crew-served weapons and a USMC security force. The IED Recognition and Convoy Operations Training were provided by personnel from the Marine Corps Engineering Center (MCEC) and the Joint Improvised Explosive Device Defeat Organization (JIEDDO).

Capt. Ed Connelly, the student assistant OIC and a dental officer at Naval Hospital Beaufort, SC, spoke of the importance of this training.

"Much of the training is based on contingencies and prepares you for those situations you hope never happen," he said. "I can complete my professional mission, dentistry, without additional training. This training allows me to survive and protect those with me."

NEMTI reports to Navy Medicine Support Command (NMSC) via the Naval Operational Medicine Institute (NOMI) in Pensacola, Fla., and Navy Medicine Manpower, Personnel, Training and Education Command (NMMPT&E) in Bethesda, Md.

CAMP PENDLETON, Calif. (Jan. 16, 2010) Tactical Combat Casualty Care students tend to a penetrating thigh injury during the Final Exercise (FINEX) at the Naval Expeditionary Medical Training Institute. Photo by HMCM Donald Whigan. (Released)

NICoE Offers A Unique Approach to Patient Care

A premier treatment facility for service members with mild traumatic brain injuries (TBI) and psychological health (PH) conditions, the National Intrepid Center of Excellence (NICoE) offers not only a unique approach to patient care, but also innovative research and technologies.

Located on the grounds of Naval Support Activity Bethesda (NSAB), the NICoE provides military patients with the opportunity to receive care in a supportive, healing environment, said NICoE Deputy Commander Rear Adm. Thomas Beeman. Slated to be fully operational in March, 2011, the NICoE can accommodate 20 patients for two to three weeks at a time, allowing more comprehensive care.

"The NICoE is designed in a way to treat, educate and [conduct] research that allows us to advance our knowledge of TBI and [Post Traumatic Stress Disorder (PTSD)]," said Beeman. "We are not unique in having this three-part mission, but we are trying various approaches to address these special and challenging patients."

A TBI may occur from direct or indirect force to the head and can range in severity. A severe TBI typically has a more permanent effect on brain function, but a mild TBI can range in recovery time and can be more difficult to diagnose. PTSD often results from having experienced or witnessed trauma and can have a lasting impact, causing fear in normal surroundings, nightmares and flashbacks.

(Top) BETHESDA, Md. A driving simulator designed to assist in patient rehabilitation at the National Intrepid Center of Excellence. Photo courtesy of the NICoE. (Released)
(Middle) BETHESDA, Md. A playground at the National Intrepid Center of Excellence (NICoE) for patients' children. Photo courtesy of the NICoE. (Released)
(Bottom) BETHESDA, Md. The National Intrepid Center of Excellence (NICoE) features a Computer Assisted Rehabilitation Environment (CAREN). Featuring a motion platform and an embedded treadmill, the machine and virtual environments help evaluate and rehabilitate a patient's vision, stride, reaction time and multitasking abilities. Photo courtesy of the NICoE. (Released)

The $65 million, 72,000-square-foot facility is staffed by psychiatrists, clinical and neuropsychologists, physical and occupational therapists, speech language pathologists, family therapists and a neuroimaging team specializing in treatment of these conditions, added Beeman. Through private donations the Intrepid Fallen Heroes Fund (IFHF) financed the center and donated it to the Department of the Navy on Aug. 10, 2010.

Unique to military medicine, the facility provides a holistic and mind/body approach, said Beeman, as patients come into the NICoE with physical, mental and spiritual wounds.

"[At NICoE], we have a unique repertoire of sophisticated diagnostic capabilities, combined with psychiatric care and holistic medicine techniques such as chigong, yoga, art therapy and acupuncture offered in a sensible two to three week period. [Patients] have been in a war zone, meaning they have moral and existential wounds. If you only treat their mental health and physical wounds you may be ignoring the spiritual wounds. If you want to return people to being wholesome, you have to treat every aspect of their being," Beeman added.

Patients are referred to the center by their initial primary care provider then are assessed by each specialist in the building. Meeting twice daily, the physicians collaborate to discuss their evaluations and develop a treatment plan for each service member during their stay at the NICoE and beyond.

"The hallmark of what makes the NICoE so special is the interdisciplinary approach," said Beeman. "Interdisciplinary means all of the disciplines in health care work collaboratively together. The advocacy of that is as a physician, we only have to take a patient history one time and each practitioner is hearing the patient dialogue with a different ear. Each caregiver can interpret that information from their specific specialty and share it with the other physicians." The patients are accompanied by a staff member who takes

BETHESDA, Md. The National Intrepid Center of Excellence (NICoE) offers a labyrinth, a path that allows meditation and prayer. Photo courtesy of the NICoE. (Released)

(Top and Bottom) BETHESDA, Md. The National Intrepid Center of Excellence (NICoE) features a Computer Assisted Rehabilitation Environment (CAREN). Featuring a motion platform and an embedded treadmill, the machine and virtual environments help evaluate and rehabilitate a patient's vision, stride, reaction time and multitasking abilities. Photo courtesy of the NICoE. (Released)

care of their scheduling and escorts them throughout their entire stay, enhancing patient experience and the outcome.

All staff members at the NICoE are dedicated to patient care. The ability to meet without delay means a more prompt continuity of care and more accurate physician observations, said Dr. James Kelly, NICoE director.

"The NICoE is a place intended to be a bridge to all of the military health system … This is intended to elevate the level of our capabilities military-wide, nationwide and perhaps universally," said Kelly. "The opportunity for us to teach and influence the military system is already happening … the military is doing this right."

BETHESDA, Md. A view from the front lobby of the National Intrepid Center of Excellence (NICoE). photo courtesy of the NICoE. (Released)

One of the goals at the NICoE is to leverage the most advanced neuroimaging technology and apply it to TBI and PH, with the hope that these new imaging technologies will significantly impact care for these injured service members, said Dr. Gerard Riedy, NICoE neuroradiologist and director of the National Capital Neuroimaging Consortium in Washington D.C.

"For treatment, we have implemented advanced neuroimaging techniques that look beyond brain structure," said Riedy. "These include diffusion tensor imaging (DTI), which images the wiring of the brain; functional MRI (fMRI), which examines various aspects of brain function, something we know to be problematic in TBI patients; spectroscopy, which examines the chemistry of the brain; PET/CT, which looks at the metabolism of the brain; and finally magneto encephalography (MEG), which is a highly specialized instrument, of which there are only 12 in the country that examines the real-time communication of the neurons in the brain."

The facility uses an array of physical, occupational and recreational therapy spaces that feature advanced training equipment to promote strength, balance, agility and aerobic conditioning. One such machine is the computer assisted rehabilitation environment (CAREN), of which there are only seven worldwide – five of which are employed by the military. Featuring a motion platform and an embedded treadmill, the machine and virtual environments help evaluate and rehabilitate a patient's vision, stride, reaction time and multitasking abilities.

The NICoE also offers patient rooms for music therapy, business

and activity centers, a family lounge and a café. An atrium called "Central Park," is also on site, featuring plants, simulated natural sounds and several walking surfaces such as stones and artificial turf.

Additionally, comprehensive support spaces are available for patients and their families to maximize their rate of recovery; there, they can unwind between treatments and provide support to one another.

Like their returning loved ones, family members also carry wounds, said Beeman.

"Sometimes loved ones are the ones who initially realize something is wrong with the patient and those family members need treatment as well," said Beeman. "We have counseling available, and they are welcome to participate in our holistic treatments. It is a way for us to give the families the skill set to identify and realize some of the dysfunctions that may affect their loved one because of these injuries."

"Trying to negotiate an unfamiliar environment with a brain injury can actually defeat, in some ways, the therapy we're trying to offer, because people are overwhelmed by the complexities and newness of the area," said Kelly. "We have the additional benefit of a Fisher House that is dedicated to this facility.

Fisher Houses are dedicated to families of patients receiving medical care at major military and Veterans Affairs medical centers. All four Fisher Houses at NSAB are located within walking distance of the NICoE and the National Naval Medical Center, Bethesda, offering the comforts of home, from handicap accessible kitchen facilities to laundry facilities, at no cost to the patient and their families.

In addition to the Fisher Houses, there are also programs in place to help school age children continue with their school work if necessary.

"We are anxious to work collaboratively with military and civilian health care systems to find the best care and treatment we can for the people that we serve and endeavor with the military to set the same standard for care with TBI and PTSD as it did with trauma care," said Beeman.

For more information on the NICoE, visit http://www.dcoe.health.mil/ComponentCenters/NICoE.aspx.

BETHESDA, Md. The National Intrepid Center of Excellence (NICoE) offers a labyrinth, a path that allows meditation and prayer. Photo courtesy of the NICoE. (Released)

MEDICAL TECHNOLOGIST AWARDED RARE PROFESSIONAL HONOR

Cmdr. Cynthia Wilkerson became the first person in the Navy to be awarded the American Society of Clinical Pathologists (ASCP) Mastership when she accepted the honor Oct. 28, 2010, in San Francisco, Calif.

The Mastership award from the Clinical Pathologists group is exceedingly rare. Out of more than 700,000 certified laboratory professionals, fewer than 35 have received Masterships. The ASCP Mastership designation honors ASCP members who have made significant contributions to the field of pathology and laboratory medicine and to the society. Eligibility is based on significant career accomplishments and contributions to the society and to the profession.

Wilkerson is Director of Clinical Support Services at Naval Medical Center Portsmouth, Va., and she also serves as the Navy's specialty leader for the medical technologist community. She supervises and directs Navy Medicine's 82 medical technologists to locations worldwide, including Iraq and Afghanistan. She enjoys working with med techs, especially being able to guide and mentor them.

"We use unbelievably sophisticated instrumentation. Gone are the days when you actually have test tubes and beakers," Wilkerson said. "It's highly sophisticated equipment and very computerized."

And that, she says, can sometimes lead to boredom in the job.

"The challenge is to keep people active and engaged, excited about what they do," Wilkerson added. "You still have to look at slides and look at cells and make determinations. Somebody still has to look at those lab results and make sure that they make sense."

It was a lab officer at Naval Hospital Bremerton, Wash., who nominated Wilkerson to receive one of the 12 masterships ASCP awarded this year.

"The Naval Laboratory community would still exist without her guidance, but we would be a pale shadow of the professional corps that she has helped us to become," said Lt. Cmdr. Todd J. Tetreault, Laboratory Department Head at Bremerton. "It really is a singular honor, and through it, she motivates the rest of us to represent our community well.

"I feel strongly that her actions have fully supported the mission espoused by the ASCP – education, certification and advocacy. She has encouraged certification at both the (micro lab tech) and (med tech) level, has worked to improve the professionalism of the Navy Laboratory community – through education and mentoring – to both the benefit of our patients and the community itself," Tetreault added.

Bette A. Jamieson, a member of the ASCP awards committee, agreed. "ASCP acknowledges the importance of (Wilkerson's) contributions to our profession by her commitment to training, teaching, and serving as a role model to our young men and women in the military service."

Throughout her 24-year naval career, Wilkerson has trained thousands of Navy medical laboratory scientists, sharing with them the passion for the field she loves.

A self-professed Air Force brat, Wilkerson first contemplated a career in medical technology as an eight-grader at Mission Junior High in Bellevue, Neb. "I loved physical science class. You'd be in the lab, and you'd have beakers of things boiling, and distillation going on … and I just loved it."

Wilkerson went to her science teacher to learn whether her fun in the lab could lead to a career. His suggestions included working in a hospital lab.

Wilkerson reminisced, "Well, then,

PORTSMOUTH, Va. Cmdr. Cynthia Wilkerson and Lt. Donnie Rosario in one of their favorite places, the lab at Naval Medical Center Portsmouth, Va. Wilkerson served as a mentor to Rosario, assisting him through the commissioning process. Photo by MC2 Riza Caparros. (Released)

what's what I want to do. I never changed my mind. When I finally went into that first hospital lab when I was a junior in college, it was kind of like I knew I was finally 'home.'"

Wilkerson earned her bachelor's degree in medical technology and her master's degree in laboratory management.

"I truly love being a medical technologist. Because of the love and passion that I feel for my job, I do the absolute best I can," Wilkerson said.

And that includes encouraging and mentoring those who have an interest in the field.

"I am prior enlisted and was stationed in Pensacola while (Wilkerson) was there," said Lt. Donnie Rosario, now a lab officer at the Portsmouth medical center. "Once she was aware of my interest in getting commissioned, she began to mentor me and show me the fundamentals of being a lab officer. She took time out of her busy schedule to teach me management techniques before I even stepped into the job.

"She was a great help through the application process and she was at my commissioning ceremony to welcome me to the community," Rosario added. "[She] continues to mentor and look after me. She's been a great mentor for me, personally and professionally."

"Her influence has been an important part of my success as an officer. Everything she taught me, I still use." Rosario said.

He now passes the torch forward. "I've had the opportunity to mentor a couple of sharp individuals in their pursuit of getting commissioned," Rosario said. He uses his experience with Wilkerson to guide his mentoring of others.

Wilkerson, he said, "showed me the impact I can make as an officer."

Wilkerson has continued to mentor Rosario since his commissioning four years ago. "[Rosario] went to Camp Lejeune, did phenomenal at Camp Lejeune, even was acting department head – as a jg – for a period of time," said Wilkerson. "That is incredible but the command was very confident he could handle the job, and he did. And he was deployed to Afghanistan was at the Role 3 Hospital."

PORTSMOUTH, Va. Cmdr. Cynthia Wilkerson in the Naval Medical Center Portsmouth, Va., lab. Photo by MC2 Riza Caparros. (Released)

Lt.j.g. Bridget Ruiz spent 10 years in the enlisted ranks before being commissioned as a lab officer in 2007. She was eager to make a good impression with her new boss at Naval Hospital Pensacola. Wilkerson was the lab manager there.

"She took me under her wing and despite how busy she was, she always took me along and made sure I knew the aspects of being a lab officer and being a naval officer. I attribute my successes, and the recognition that have come along, to her," Ruiz said.

"I got picked up for the Navy's Duty Under Instruction Program (DUINS) last year and right now I am in New York doing my grad work for Clinical Laboratory Management at Long Island University. Typically, junior officers in our community have to wait until after their second duty station before they are considered for DUINS, but (Wilkerson) encouraged me to apply because she was certain I was ready after only two years ."

"Her confidence in me meant so much," Ruiz added. "My success so far in the med tech community and as an officer have been because (Wilkerson) took to the time to mentor me and, to this day, continues to mentor me."

Wilkerson explained her philosophy. "We have to mentor, train and develop the people who are coming up behind us, I.D. the people who should be officers and help them along that path. I've helped with countless commissioning packages."

"I get very proud," she added.

Wilkerson has served as president of the Society of Armed Forces Medical Laboratory Scientists and was named the society's Tri-service Senior Laboratory Officer of the Year in 2009 and Distinguished Service Award in 2006.

Wilkinson plans to get involved in promoting Medical Technology (now called Medical Laboratory Scientist) as a career. She's also looking forward to her next tour at the Center for Clinical Laboratory Medicine in Washington, D.C., which is responsible for the accreditation/license of laboratories from all three branches of the armed services.

NMCP Orthopedic Fellowship Program Earns Accreditation

By MC2 Riza Caparros, NMCP Public Affairs

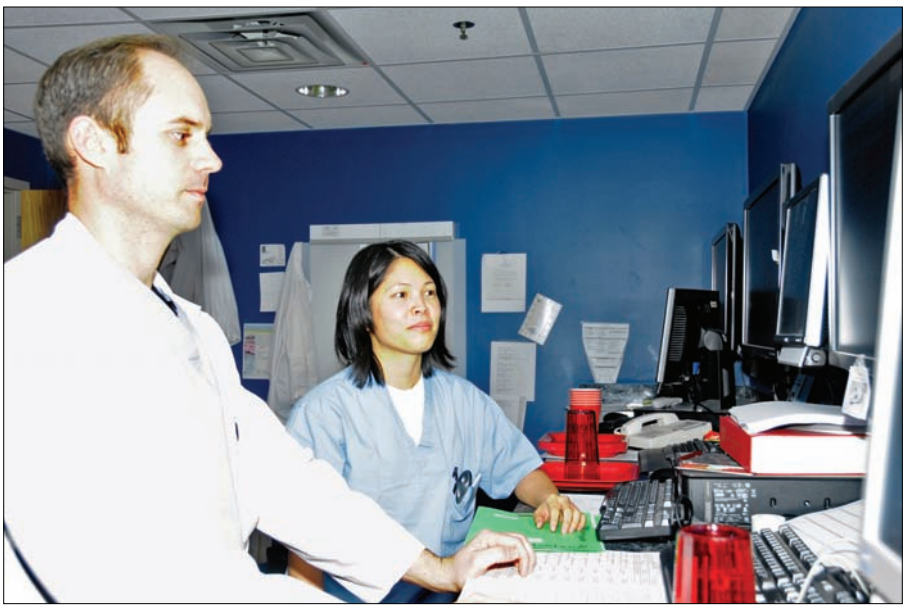
On September 20, 2010 Naval Medical Center Portsmouth's Orthopedic Physician Assistants' Fellowship Program became only the second program to be accredited in the nation by the Accreditation Review Commission on Education for the Physician Assistant (ARC-PA), and the first in the Department of Defense.

.ARC-PA is an accrediting agency that defines the standards for physician assistant education and evaluating physician assistant educational programs within the U.S. and ensures compliance with the standards. Accreditation is only bestowed to those programs meeting ARC-PA's stringent guidelines. ARC-PA accredited NMCP's program in September, recognizing the caliber of the program and the training its fellows receive. Consequently, the accreditation makes the Portsmouth medical center attractive to highly motivated physician assistants seeking to further their training.

Orthopedic Physician Assistant Fellowship Program director Lt. Cmdr. Kerri Browne, who led the charge for the program's accreditation, said the accomplishment was a huge success for the program and advances the quality of the program's training and education.

"This accreditation holds us to a higher level of standards," said Browne. "It is a validation that the program is within standards of the ARC-PA, which are very high and well respected. A fellow graduating from this program is highly marketable and skilled in his specialty."

There are currently two physician assistant fellows filling fellowship billets in NMCP's Orthopedics Department. A fellow is a physician or physician assistant who enters a training program in a medical specialty, usually in a hospital or academic setting.



PORTSMOUTH, Va. (Dec. 21, 2010) Orthopedic physician assistant fellows Lt. Clay Ward and Lt. Melissa Liwanag review an X-ray while discussing a patient's care. Photo by MC2 Riza Caparros. (Released)

"It feels great," said Capt. Daniel Unger, medical director of the program. "With this accreditation, it speaks volumes about NMCP's training and how innovative it has been over the years to meet the needs of the medical community and the Navy."

"There is certainly a great deal of pride in being associated with the first accredited Orthopedic PA Fellowship within DoD," said Lt. Clay Ward, one of the fellows. "This program has a great reputation, so being awarded accreditation will serve to even further validate the hard work put into the orthopedic training PAs receive here at NMCP. "

Lt. Melissa Liwanag, the other fellow, described the program as challenging, yet extremely rewarding.

"There is a good mix of academic days, labs, clinic time and OR time," Liwanag said. "It's a great environment to gain both didactic (book) and clinical knowledge that would otherwise take years of on-the-job training to learn and master."

"Eighty percent of patients who are seen in the Orthopedics Department involve muscular-skeletal injury," added Unger. "The presence of physician assistants in the department has a huge impact on access to see a competent muscular skeletal provider as soon as possible, thus making PAs a great force multiplier in the specialty."

ARC-PA

Accreditation Review Commission on Education for the Physician Assistant, Inc.

Corpsman Sets Standard for Preventative Medicine

Story By Donna Miles, American Forces Press Service

Ensuring that Afghanistan's security forces are trained and equipped to assume increased security responsibility is a keystone of the U.S. and coalition strategy there.

Navy Petty Officer 1st Class Darrell T. Mangham recognizes that. But as a hospital corpsman with extensive preventive medicine expertise, he also knows that the train-and-equip mission can be brought to its knees if illness or disease infiltrates the force.

Mangham spent a year in Afghanistan helping to stand up preventive medicine programs he said will have a long-term impact, not just on the Afghan National Army and Afghan National Police, but also on the country's civilian population.

For his efforts, Mangham became the first enlisted U.S. service member to receive the prestigious Hunter-Strickland Excellence Award for Deployment Preventive Medicine.

This year's award, presented March 24, 2011 at the Armed Forces Public Health Conference in Hampton, Va., is named for Army Col. George W. Hunter III and Army Capt. G. Strickland, pioneers in advancing tropical disease prevention during the 1940s.

Mangham was singled out this year as the service member who best exemplified their work in a deployed setting — in his case, as assistant chief of preventive medicine for the NATO-led International Security Assistance Force training mission in Afghanistan from February 2009 to February 2010.

Currently assigned to the Naval Medical Center in San Diego, Mangham knew he could serve as a corpsman supporting U.S. Marines fighting enemy forces alongside their Afghan counterparts. But instead, he volunteered to help the Afghan security forces confront a less-recognized but equally insidious enemy: illness and disease spread through poor hygiene, improper food storage and handling, and unsanitary living and sleeping arrangements.

"I volunteered for this," Mangham said of his first deployment with the Afghan army. "I wanted to go and assist at the ground level in rebuilding Afghanistan as a nation."

Once on the ground in the Afghan capital of Kabul, Mangham said, he began building on groundwork already laid as a mentor to the Afghan National Army's surgeon general's public health chief. He led teams that inspected the way the Afghans were shipping, storing, preparing and handling food for the army and police forces. Two of the big gaps he found were lack of refrigeration and specific guidelines regarding food.

Mangham also began looking into living conditions for Afghan security forces. One problem, he said, was that Afghan troops often shared the same bunk — an accepted cultural norm in Afghanistan, but one Mangham said makes it too easy for illness and disease to spread.

He helped to introduce a new ban on bunk-sharing, instituting a rule that bunks must be three feet apart, with troops positioned in alternating head-to-toe arrangements.

"That way, if one soldier sneezed, the germs wouldn't immediately go to the next soldier," he said. "That decreases the passing of viral diseases."

Those efforts resulted in a 40 percent decrease in disease transmission among the Afghan forces, he said.

Operating in the southern Kandahar and Helmand provinces, Mangham also served as senior noncommissioned officer of a six-person team that initiated medical screening and vaccination programs at Afghan National Police recruiting stations.

In addition to providing personal hygiene training, the team members isolated police candidates with contagious illnesses, treating them before allowing them to rejoin the ranks.

Mangham said he is honored to receive this year's Hunter-Strickland Excellence Award for Deployment Preventive Medicine.

"But this is not something I did as an individual," he said. "There were a lot of key players in this effort. I am just one of them."

SOUTHWEST ASIA-- HM1 Darrell Mangham checks on a wounded sailor during exercises at a range in Southwest Asia in preparation for his deployment to Afghanistan as assistant chief of preventive medicine for the NATO-led International Security Assistance Force training mission in Afghanistan. Mangham received the 2011 Hunter-Strickland Excellence Award for Deployment Preventive Medicine for his work during that deployment. Photo by Petty Officer 3rd Class Jorge Saucedo. (Released)

BUILDING THE FUTURE FORCE

METC *'doing great things'*

Tri-service campus will be fully operational by September

FORT SAM HOUSTON, Texas. (Jan. 27, 2011) Hospital Corpsman Second Class Misty Carlisle (left) instructs Airman Basic Alejandro Esparza on proper scrub techniques as part of his surgical technician class at the Medical Education Training Campus. Photo by Steve Elliott. (Released)

Milestones continue to be reached and student loads are on the rise since the doors of two of five medical instructional facilities opened June 30, 2010, during a ribbon-cutting ceremony for the expansive tri-service Medical Education Training Campus, or METC, at Fort Sam Houston in San Antonio, Texas.

April 21, 2011, will officially mark the relocation of the Naval Hospital Corps School (NHCS) from Great Lakes, Ill., and the METC is scheduled to be fully operational prior to Sept. 15, 2011, the deadline established by the 2005 Base Closure and Realignment Commission (BRAC) initiative.

"Our folks are doing great things," said Rear Adm. Bob Kiser, METC's first commandant. "With full awareness of the storied heritage of our individual services, and building upon the collective legacy of excellence that has always been our communal touchstone, we at METC are creating a future that all of us can be proud of: training the world's finest Hospital Corpsmen, medics, and techs; supporting our Nation's ability to engage globally. I am absolutely filled with pride and honored beyond words to be counted as part of this inaugural crew."

Highlights since the opening include the METC's first class in the new facilities, the service-specific Navy Radiology class that began July 7, 2010, and the METC dining facility opening Oct. 1, 2010. At 80,000 square feet and the capability to serve 14,400 meals per day at a rate of 4,800 every 90 minutes, the dining facility is the largest in the Department of Defense (DOD).

Since June 30, 2010, the remaining three of five instructional buildings have opened and are either in use or are being preparing for classes.

The joint Navy, Army and Air Force milestones and the impact to military medicine were emphasized by senior military medical leaders Jan. 24-27 at the Annual Military Health System (MHS) Conference in National Harbor, Md. Vice Adm. Adam M. Robinson Jr., the Navy Surgeon General (SG), discussed the importance of METC and the need for proper education and training.

"It's about the ability to train and

FORT SAM HOUSTON, Texas. (Jan. 27, 2011) Hospital Corpsman Second Class Misty Carlisle (right) instructs Airman Basic Alejandro Esparza on how to set up the back table and sterile field in an operating room during a surgical technician class at the Medical Education Training Campus at Fort Sam Houston. Photo by Steve Elliott. (Released)

educate a fully ready force in order to deliver health care anytime, anywhere," said Robinson. "We need to standardize our training and education across the Navy Medicine Enterprise, across the services, and across the Medical Health Service. This will eliminate gaps and overlaps, increase efficiencies through resource sharing, and integrate learning strategies. METC will help us achieve this."

Army Pvt. Camille Faulkner, a METC Dental Specialist Course student, is one of 1,350 joint and allied students participating in one of 19 programs as of February, 2011. She said she is benefitting from METC's top-notch facilities and exceptional inter-service education and training.

"I enjoy training with the other services," said Faulkner, a Copley, Ohio, native with six months in the Army. "We get a chance to ask questions about the other branches and get real answers. I think our training is getting us ready to be well prepared."

Rear Adm. Eleanor Valentin, commander of Navy Medicine Support Command, said training with sister services is an important aspect of the METC mission.

"METC's mission is to produce the world's best military healthcare personnel to support the nation, and the vision is to be the nation's leader in military medical education and training," said Valentin, who has oversight of Navy Medicine's education and training programs. "This mission and vision guided us to ensure METC provides curriculum and education that preserve each service's identity while creating an environment where our enlisted professionals can learn from their counterparts in their sister services."

Air Force Tech Sgt. Brianna Hunt is a Surgical Course instructor who moved from Sheppard Air Force Base in Wichita Falls, Texas, as part of the METC consolidation. She said she appreciates METC's realistic training and equipment, and compared and contrasted METC and Sheppard facilities.

"The facility at Sheppard Air Force Base consisted of two large operating rooms," the Winters, Calif., native said. "We currently have nine operating rooms that are smaller, which is more realistic. We believe that the operating rooms that are more to scale force the students to be more aware of their proximity to the sterile fields, therefore decreasing the risk of contamination."

Hunt and her tri-service METC instructor counterparts use interactive smart podiums that are connected to electronic curriculum and training tools. Robust internet and intranet services include e-mail and blended learning via a web-based learning management system BlackBoard that uses real-time testing that allows for immediate test results and grades.

Medical enlisted training programs from five Army, Navy and Air Force medical training centers have already moved or are in the process of moving to San Antonio for consolidation. METC's footprint covers more than 2-million square feet on Fort Sam Houston. Two new Navy dormitories and one Air Force dormitory will each house 1,200 personnel. Two other dormitories are being built nearby for Army students - one housing 1,200 Soldiers and the other 600.

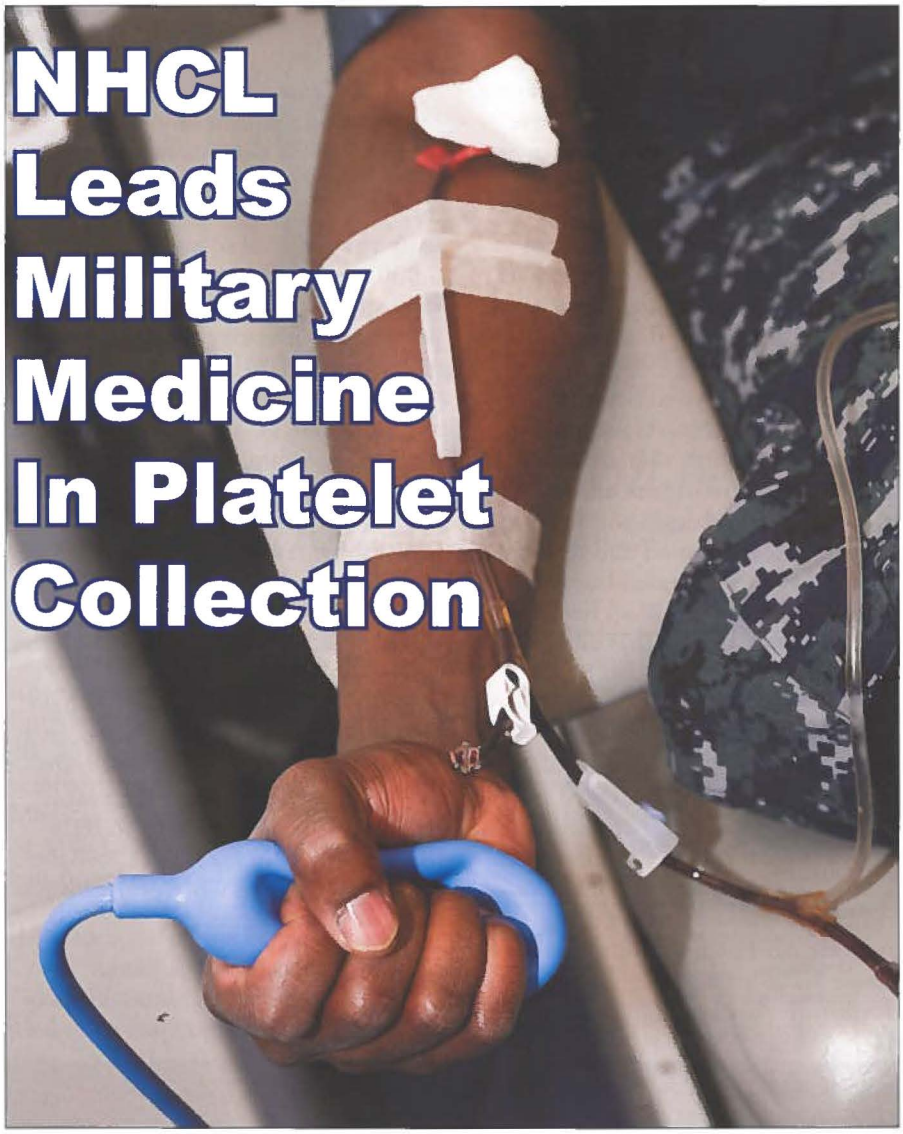
The METC campus will train more than 24,500 students annually in 58 instructional programs with an average daily student load of approximately 8,000 when fully operational. By service, student breakdown includes approximately 45 percent Army, 31 percent Navy and 24 percent Air Force.

International students are now attending METC as part of an international program that is scheduled to grow. There is also a distance learning program in the works and plans for educational research projects.

"This place is brand new with a college campus feel to it," said Navy Petty Officer 1st Class Christal Pierce, a Surgical Technology Course instructor and Chicago native. "I have always felt Navy Medicine has been at the forefront of education and training. Having deployed in the past, I believe it is very important to train like you work, so the METC collaboration will only enhance our readiness to assist when necessary."

FORT SAM HOUSTON, Texas. (Jan. 27, 2011) Chief Hospital Corpsman Gentry Lloyd (left) demonstrates to students at the Tri-service Medical Education Training Campus dental technician laboratory at Fort Sam Houston how to set up a dental examination chair. Photo by Steve Elliott. (Released)

NHCL Leads Military Medicine In Platelet Collection



Saving the life of a Marine in Afghanistan or helping treat a premature baby with a brain hemorrhage is now something you can do in just shy of two hours. You can change the lives of these critically-ill patients in need of blood platelet transfusions by visiting the Blood Donor Center at Naval Hospital Camp Lejeune (NHCL), and donating platelets through NHCL's precedence-setting blood platelet collection process.

NHCL is the first Department of Defense medical treatment facility (MTF) and second blood center in the nation to collect apheresis blood platelets using two key advances in medical science and technology: an AMICUS Separator and InterSol. The AMICUS Separator is a state-of-the-art piece of blood platelet collection equipment. InterSol is a new, Federal Drug Administration (FDA) approved platelet additive solution (PAS).

"NHCL leadership identified the need for apheresis platelet collections and challenged the Blood Donor Center to start up a program," said Lt. Cmdr. Jonathan Hoiles, director, Blood Donor Center. "After extensively researching the market, the AMICUS Separator and Intersol were the two most state-of-the-art and cost effective technologies."

The donation process is fairly simple. During an apheresis collection, the AMICUS Separator extracts whole blood from the donor's arm and sends the blood through sterile tubing into a centrifuge. The centrifuge then spins the blood until it separates into three components: red cells, plasma and platelets.

Following the donation, the donor's blood platelets are suspended in a mix of 65 percent InterSol and 35 percent plasma. This is the most significant difference from traditional apheresis collection processes in which platelets are suspended in 100 percent plasma. The reduced volume of plasma in the platelet product allows for a host of benefits to the platelet transfusion recipient and to the blood center.

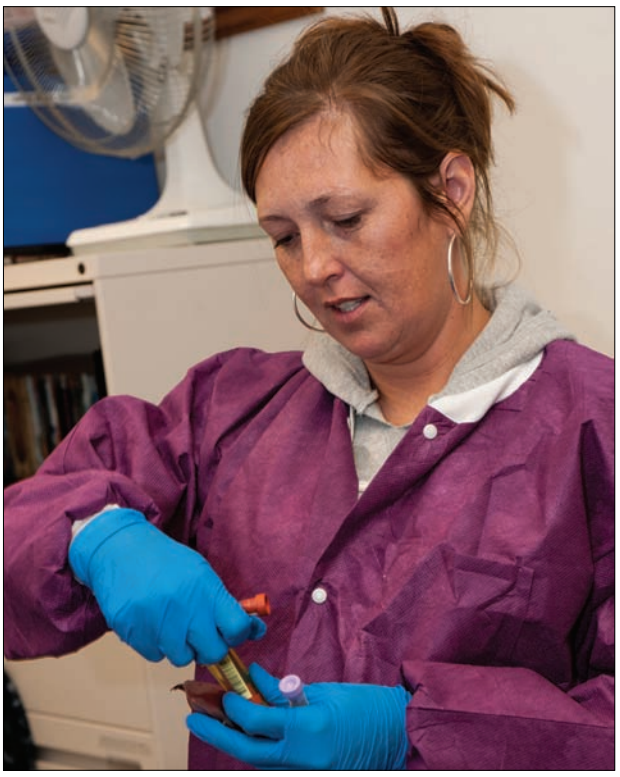
For the platelet transfusion recipient, the suspension mix reduces the risk of allergic reactions and Transfusion Related Acute Lung Injury (TRALI). TRALI is the leading cause of transfusion related deaths and the number one safety concern of all blood donor centers.

"Patient safety and process improvements are always our top priorities," said Hoiles.

Lt. Cmdr. Elizabeth Grasmuck, medical director, Blood Donor Center, explained that the majority of platelet transfusions done at NHCL are to support the Labor and Delivery Department patients.

With a Labor and Delivery Department that delivers an average of six babies a day, NHCL staff identified the need to have platelets on hand, should an emergency arise. Typically, platelets are requested by doctors once every two weeks.

"In general, platelets are transfused to



(Left) CAMP LEJEUNE, N.C. (Jan. 12, 2011) Hospital Corpsman 2nd Class Marcus Edwards, laboratory technician, Naval Hospital Camp Lejeune, gently squeezes a foam ball to stimulate blood flow, during the two hour apheresis collection.

(Middle) CAMP LEJEUNE, N.C. (Jan. 12, 2011) One of the first Naval Hospital Camp Lejeune staff members to donate blood platelets using the Blood Donor Center's new, state-of-the-art technology, Hospital Corpsman 2nd Class Marcus Edwards, laboratory technician, sits back as April Daniels, phlebotomist, monitors the collection process.

(Right) CAMP LEJEUNE, N.C. (Jan. 12, 2011) April Daniels, phlebotomist, Naval Hospital Camp Lejeune, begins the process of collecting three blood products through a single needle then tests and verifies that each apheresis collection exceeds the standards for a potential transfusion. Photos by HMSN Bryan J. Acevedo. (Released)

patients who have a low platelet count, damaged platelets, or need platelets to assist with the normal blood clotting processes," Grasmuck added.

Grasmuck further explained how the on-site process benefits the rare trauma or critical care patient in need of platelets in order to stabilize him or her prior to transport for treatment at a larger medical facility.

"Having the technology on-site reduces the time patients in need of blood platelets wait to receive platelet transfusions from an average of five hours down to just a few minutes," said Grasmuck.

In the past, blood center staff sent a courier to local community hospitals or blood suppliers as far as Norfolk, Va., to pick up platelets. This trip ranged from four to six hours and was done after a doctor identified the need for a transfusion.

This new process also gives the donor and the center the options to donate and collect multiple blood products in a single donation.

"By storing platelets in the platelet additive solution, we are able to collect platelets and collect more plasma into a second container," said Hoiles. "Then we can store the platelets for NHCL patients, freeze the plasma, and ship the plasma to the operational theater."

The transfusion recipient and the Blood Donor Center are not the only other benefactors of this advantageous process.

Because the red blood cells are returned to the donor, the donor typically feels less fatigue after a platelet donation as compared to a whole blood donation.

Hospital Corpsman 2nd Class Marcus Edwards, NHCL laboratory technician, and one of the first platelet donors to experience the new procedure, describes the process as 'relaxing' then noted how the process takes longer than an average red blood cell donation.

"At my appointment, I filled out paperwork, discussed the process with the staff and got started," said Edwards. "There was only one needle inserted into my arm. The entire process took about two hours, compared to about 20 minutes for a red blood cell donation, but I was able to sit in a comfortable environment and enjoy a movie on the center's portable DVD player."

After the apheresis process was complete, Edwards noted feeling completely normal.

Now that the Blood Donor Center has the ability to collect platelets, the biggest challenge foreseen by staff is getting donor participation. The shelf life for blood platelets is considerably less than red blood cells, which can last between 35 – 42 days, and fresh plasma, which when frozen, is good up to one year. Platelets only last up to five days.

The body's quick replenishment of platelets and plasma also enables donors to give platelets more frequently than whole blood. Platelets can be donated at NHCL once every two weeks, not to exceed 24 times in a 12 month period.

Lt. Cmdr. Hoiles encourages everyone who is able to donate platelets, particularly those who are blood type AB.

"Blood group AB, representing only four percent of the population, is the universal plasma and platelet type and can be given to any patient," said Hoiles. "I encourage potential donors to contact NHCL or the nearest blood center in the Armed Services Blood Program to see how they can donate blood. Each donation is a gift of life."

Official guidance encouraging MTF Commands to support blood and platelet donations can be found online on the Armed Service Blood Program web site at www.militaryblood.dod.mil.

To donate or find out more information, e-mail NHCL's Blood Donor Recruiter, Cal Glazier at nhclblooddonorrecruiter@med.navy.mil.

Keeping Aviators Healthy and Flying

Aviation Safety School Medical Staff Fly High in Mishap Prevention

When most people think about opportunities in Navy Medicine, they think about medical treatment facilities (MTFs), hospital ships, or even corpsmen in combat, but what they rarely think about is aviation mishap prevention. According to the Naval Safety Center, more than three-quarters of aviation mishaps are caused by human factors—human factors that Navy Medicine can address. There is an institution with the sole purpose of preventing these mishaps.

That institution is the Naval School of Aviation Safety (SAS) in Pensacola, Fla., and it has been churning out over 1,000 graduates every year – mainly pilots and flight officers, along with a few medical types – for longer than most of us have been alive. They have made it their mission to address these human causal factors and they're succeeding at it with Navy Medicine assets.

SAS is aligned under Naval Aviation Schools Command (NASC). NASC is currently responsible for the training of all Student Naval Aviators, Student Naval Flight Officers, Student Naval Flight Surgeons and other aeromedical officers including physiologists and psychologists in Aviation Pre-Flight Indoctrination (ground school prior to flying).

Since the school's inception in 1950, average mishap rates have fallen from nearly one in 1,000 flight hours, to less than one in 100,000 flight hours. This is a hundred-fold reduction in mishap rates, thanks in large part to the programs taught by the school and used throughout the Fleet. Enter the school's medical staff.

The medical staff – the Command Flight Surgeon, the Aerospace Experimental Psychologist (AEP), and the Aerospace Physiologist —plays a critical role in mishap prevention by instructing aviators what key factors to look out for during potentially hazardous flight scenarios. The school's curriculum emphasizes the importance of their roles. Three separate and distinct curricula exist at SAS.

The first is an intense five-week Master's level course that trains Aviation Safety Officers (ASOs). The five week course covers a myriad of disciplines, including Safety Programs, Mishap Reporting, Aeromedical, Human Factors, Aerodynamics, Structures and Mishap Investigations. This graduate-level course is designed to maximize the training and education received by the ASO to include hands-on experience with aircraft wreckage from actual mishaps, a parts lab to examine individual parts, and multiple assignments that focus on such man-machine interface topics as ergonomics and physiologic episodes in aviation. In addition, the training received by the ASO allows for the designation of each individual as an Operational Risk Management (ORM) instructor upon graduation.

The second curriculum at SAS is that of the Aviation Safety Commanders (ASC) course. Prospective commanding officers (CO) and executive officers (XO) attend this six-day intensive course prior to taking over squadrons, groups or wings. Greater concentration is given to the leadership aspects of aviation safety, with specific attention to human factors and fatigue – which as stated account for over seventy-five percent of all aviation mishaps.

Crew Resource Management-Instructor (CRM-I) is the third curriculum offered by SAS. This course prepares aviators to become instructors in CRM. CRM originated at a NASA workshop in 1979, with an aim of maximizing available cockpit resources – both crew and equipment – in order to reduce mishap rates. Classroom time in the one-week course is spent on the seven critical skills of decision-making, assertiveness, mission analysis, communication, leadership, adaptability/flexibility and situational awareness, followed by development and presentation of individual case studies. The course identifies issues such as fatigue and stress which are explored as detractors of the seven critical skills.

All three members of the medical staff are involved in teaching and developing all three curricula. Various studies have quoted human factors as accounting for between seventy and ninety percent of all

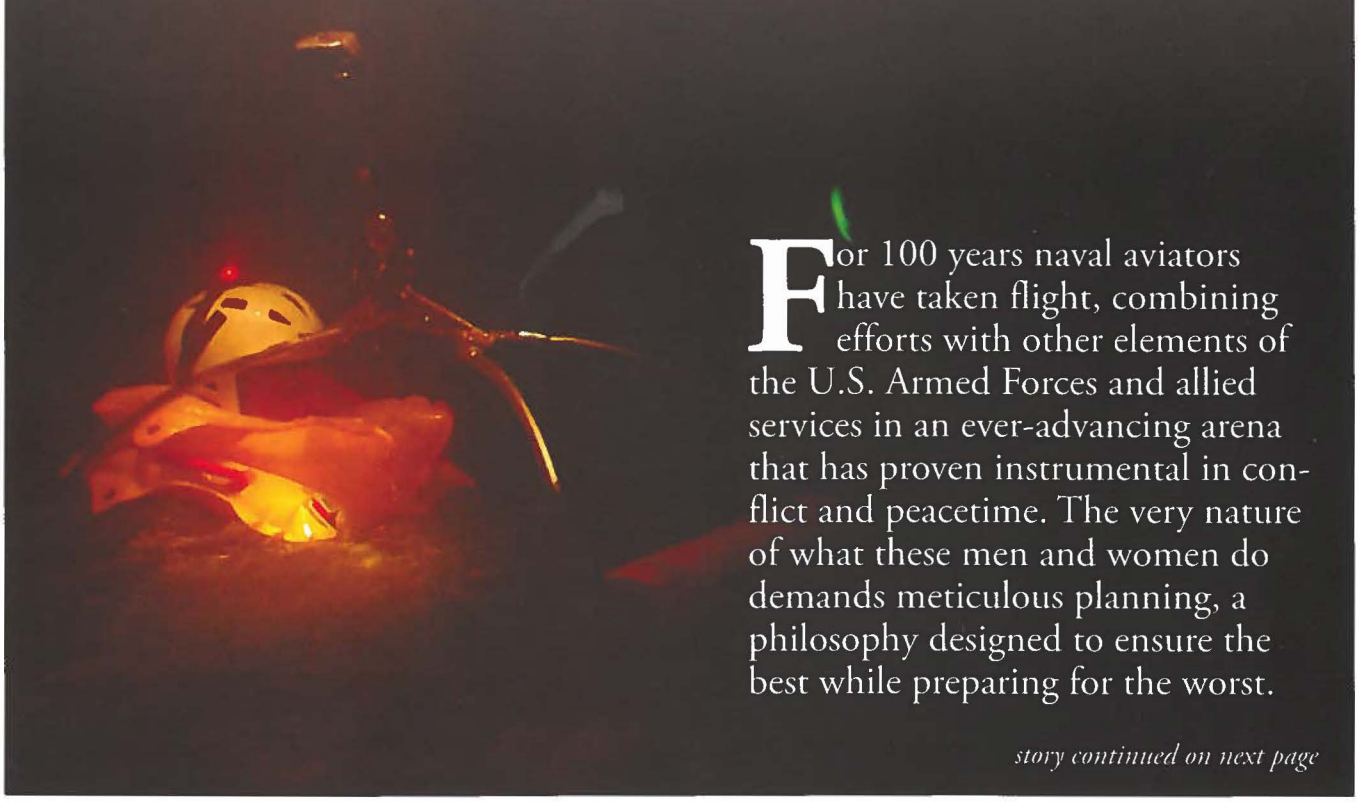
PENSACOLA, Fla. (June 4, 2010) The School of Aviation Safety's current flight surgeon, Cmdr. (Dr.) Walter "Lunar" Dalitsch, teaches the investigation of physiologic and human factors as causes of aviation mishaps to students at the school's "Crash Lab." Photo courtesy of School of Aviation Safety. (Released)

AVIATION PHYSIOLOGY *Meets* Water Survival at ASTC JAX

Story and Photos by MC1 Bruce Cummins, National Naval Medical Center Staff Journalist Public Affairs

(Right) JACKSONVILLE, Fla. -- Navy Diver 2nd Class Christopher Tuschl, a Monroe, Ga., native, instructs students on the Shallow Water Initial Memory Mechanical Exit Release device during an Aviation Survival Training Center (ASTC) Aircrew Refresher Course Jan. 27 in Jacksonville, Fla. The ASTC provides courses for naval aircrew personnel, and operates under the aegis of Navy Medicine Support Command. (Released)

(Below) JACKSONVILLE, Fla. -- A student waits in the hoist during a night scenario at the Naval Air Station Jacksonville Aviation Survival Training Center's (ASTC) pool during an Aircrew Refresher Course Jan. 27 in Jacksonville, Fla. (Released)



For 100 years naval aviators have taken flight, combining efforts with other elements of the U.S. Armed Forces and allied services in an ever-advancing arena that has proven instrumental in conflict and peacetime. The very nature of what these men and women do demands meticulous planning, a philosophy designed to ensure the best while preparing for the worst.

story continued on next page

aviation mishaps, so their courses are key components in educating fleet aviators. The medical instructors base their topics on data from the Naval Safety Center that help to pinpoint topics of interest. In addition to their duties at SAS, all members of the medical staff are also part-time professors at Embry-Riddle Aeronautical University – the nation's oldest aviation university – where they teach at both the undergraduate and graduate levels.

The SAS' current flight surgeon, Cmdr. (Dr.) Walter "Lunar" Dalitsch brings a significant amount of expertise to his post with a Master's degree in Public Health, a second Master's degree in Aeronautical Science with a dual concentration in Human Factors and Aviation Safety, in addition to his medical degree. He is also board-certified in Aerospace and Occupational Medicine which is a requirement for his job. Dalitsch has had direct experience with three aviation mishaps, and peripheral experience with half a dozen others – traditionally also a prerequisite for the job. He credits his firsthand knowledge of these tragic situations as inspiration for what he teaches now.

"One night I lost four shipmates when two planes collided on the deck of the carrier," said Dalitsch. "As the flight surgeon it was my responsibility to assess the medical situation of both those who had perished and those who survived the crash. This experience really opened my eyes to what I could and had to do as a flight surgeon."

Dalitsch says that he has never since underestimated the role of the flight surgeon in aviation safety noting that every mishap he has dealt with has been either directly or indirectly preventable. He uses a poignant quote from Wilbur Wright to convey this point, 'In flying, I have learned that carelessness and overconfidence are usually far more dangerous than deliberately accepted risks.'

"I tell my students that I've never left a command, looked over my shoulder and asked what more could I have done clinically." said Dalitsch. "But I've always asked what more could I have done for aviation safety and the safety of my fellow aviators."

As an instructor, he tries to instill in all of his students the importance of COs, XOs, and each individual aviator, to engage their flight surgeons in their aviation safety programs. According to Dalitsch this is one way the Navy can make a breakthrough on the human factors and bring mishap rates even closer to zero. Due largely to the increased emphasis on human elements involved with flight taught in the aviation safety curriculum, 2010 was the safest year in Naval Aviation history with a mishap rate of less than one in the Navy and barely over one per 100,000 flight hours for the Marine Corps.

PENSACOLA, Fla. (March 12, 2010) Lt. Pete "BB" Walker, MSC, the School of Aviation Safety's Aviation Experimental Psychologist, is heavily involved in multiple research projects, and actively supports fleet inquiries regarding human factors in aviation on a daily basis. Photo courtesy of School of Aviation Safety. (Released)

Currently, Dalitsch is conducting research into the ingredients, effects and risks of nutritional supplements and energy drinks, as well as peripheral research and literature reviews in fatigue and its effects in the operational environment. He is also involved with the DoD Human Systems Integration Workgroup and exploring the possibility of a quad-service waiver guide with colleagues in the other service aviation branches.

There are a lot of human and medical factors to take into account in aviation safety and the psychology of the problem is just as important as the physical part. Much like Dalitsch, as the AEP, Lt. Pete "BB" Walker, MSC, brings a wealth of knowledge and experience to the table with a Ph.D. in cognitive psychology. He has been published many times including the publication of a series of studies that focus on the validation of the Human Factors Analysis and Classification System (HFACS).

"The HFACS model is a classification tool that allows an aviation mishap board to identify the human causal factors of mishaps," said Walker. "Early research suggested that the model was very consistent meaning there was a great deal of agreement amongst raters. However, the DoD recently added an additional layer of granularity to the model, alpha numeric codes, that identify the specific issues with regards to the mishap. My research has focused on both the validation of this newer version of HFACS, while also showing its utility in identifying historic trends."

While his work in coding human causal factors certainly lends itself to lessons learned in aviation safety after a mishap, Walker's psychological personality studies have potentially far-reaching impacts on mishap prevention. Walker is working with the school's Aerospace Physiologist collecting data from fleet aviators on the big five personality scale using the short form of the neo-pi.

"While aviators may come from a very diverse group with different interests, our research findings indicate very consistent results in the aviation community on certain domains of the big five personality scale," said Walker. "We are using the findings from this study to help identify

personality traits that are common among successful fleet aviators and conversely, we hope to use these results to identify personality characteristics that are indicative of at-risk aviators."

In October 2002, Cmdr. Bill "Pop" Little (Ret.), the SAS Aerospace Physiologist, retired from active duty from the Naval Operational Medicine Institute (NOMI) in Pensacola, Fla., and was quickly picked up as a civilian instructor at SAS for his expertise in the field. He is board-certified in aerospace physiology and has three master's degrees with concentrations in safety and human factors. As a past graduate of the ASO program, Little was designated as an Aeromedical Safety Officer (AMSO) while on active duty. Currently, there are only about thirty AMSOs in the Navy at any given time. He has investigated numerous mishaps and was a key player in the development of numerous safety programs. His experience both in and out of the service has influenced his ideas on the curriculum at SAS and impacted what he teaches to his students.

"I would say the two areas that have impacted my teaching the most over the last 35 years are the benefits of exercise strength training on an aviator's physical fitness and the benefits of exercise for dealing with psychological stress," said Little. "While Dr. Dalitsch deals with the strength training issues, Dr. Walker and I team up to address the psychological aspects of stress a great deal in our teaching. All of these issues and more are taken into account as we develop and fine tune our curricula."

Little notes research reviews that the medical staff has conducted on a variety of topics including nutrition, decision making, judgment, situational awareness, communication, and leadership. According to Little, the medical curricula "undoubtedly changes more than all the other disciplines covered in the five week school" because advancements and discoveries in medicine are consistently changing.

In physiology, time is spent discussing hypoxia, G-induced loss of consciousness (G-LOC), spatial disorientation and visual illusions. A full hour-and-a-half is spent with ASOs on the subject of fatigue, which is the number one aeromedical causal factor of mishaps and hazard reports.

As evidenced by their individual contributions, the medical staff stays extremely busy instructing both at SAS and teaching at Embry-Riddle, while keeping up their own flight qualifications. That certainly doesn't encompass all of their duties though. Daily telephone calls and e-mails arrive from the fleet and must be fielded by the staff. Questions range from the proper sequence of tactical jet physiologic warm-up maneuvers to appropriate nanocode usage for human factor analyses to how to objectively examine fatigue levels to maximize efficiency in writing flight schedules. Dalitsch even addressed concerns about the possible health effects of crude oil exposure while treading water in the Gulf of Mexico following an ejection or bailout during last year's Gulf of Mexico oil spill.

"I personally flew oil surveys with the U.S. Coast Guard along the coast, and to the Deepwater Horizon oil rig in order to accurately respond to these concerns," said Dalitsch . "Answers to questions like this come in everyday and we have to be prepared to answer them. The fleet relies on us to know and to tell them how to prepare, what to do and how to react."

At the end of the day, it seems clear that Navy Medicine has far more reaching responsibilities and influence than just clinical medicine or humanitarian missions. The priority has been, and always should be supporting the strategic mission of the Navy and Marine Corps through the tactical use of its individual assets. Keeping warriors healthy and flying safely is the mission of the medically trained staff at the SAS. Keeping all Navy and Marine Corps warriors healthy and safely accomplishing their unit assignments must be the personal mission of every medically trained individual in today's Navy and Marine Corps.

Cmdr. Dalitsch is the flight surgeon on staff at SAS and in his spare time enjoys flying his airplane with his wife, two dogs, cat, Christmas presents and three-year-old future aviator son. Lt. Walker is the staff Aviation Experimental Psychologist, who uses his mathematical intuition and scientific training to clean up at the poker tables when he's not at work. Cmdr. Little (Ret.) is the aviation physiologist aboard SAS, and enjoys every moment he can with his nine grandchildren.

PENSACOLA, Fla. (March 12, 2010) Aircraft are manufactured with potentially hazardous materials, such as these carbon based composites. The SAS medical staff teaches how to identify potential health hazards and mitigate these threats before a mishap actually occurs – as well as how to "safe" these fibers so they can be used in the teaching environment. Photo courtesy of School of Aviation Safety. (Released)

PENSACOLA, Fla. - Principal investigator, Dr. Jeffrey Phillips (left), and Summer Dodson, a research assistant, monitor subjects during hypoxia exposure through a video camera inside the testing booth and a computer monitor located outside of the booth. Photo provided by NAMRL Public Affairs.

NAMRL Studies Effects of Hypoxic Stress on Cognitive Processes

For the last several months the Naval Aerospace Medical Research Laboratory (NAMRL) hypoxia research team has been preparing for an upcoming study on the effect of acute hypoxic stress on vital cognitive and perceptual processes. This new effort focuses on the breakdown and recovery of these processes.

This study, which is the most recent in a line of related studies, includes measures of simple cognitive and perceptual processes such as visual acuity and simple reaction time, and higher-order processes such as executive function.

"Our goal is to determine whether hypoxia affects both simple and higher order processes similarly and concurrently, or if some processes are temporarily preserved at the expense of others," Dr. Jeffrey Phillips said. "We are also trying to develop a more accurate picture of the recovery sequence of these vital processes. Earlier work done in our laboratory suggests that full cognitive perceptual recovery lags significantly behind the restoration of most measures of blood oxygen saturation."

Phillips is the project's principal investigator. NAMRL scientists will also test the feasibility of in-cockpit monitoring of brain oxygen saturation using near infrared spectroscopy (NIRS) as part of a hypoxia early detection and warning system for naval aviators. Preliminary data suggests that NIRS measurements taken from the cerebral cortex correlate more closely with the recovery of cognition and perception than measurements taken from other places on the body, such as a finger.

"NIRS measurements taken from the cerebral cortex appear to respond more quickly to the onset of hypoxic stress and provide a more accurate picture of the recovery of cognitive perceptual processes following exposure more than other measures," Phillips said. There are currently no physiological monitoring systems in any naval aircraft to warn naval aviators of an impending hypoxic episode, Phillips added.

The upcoming study requires the calibration of several advanced physiological and psychological data acquisition systems, including measures of blood oxygen saturation, pupilometry, expired gas and cognitive perceptual performance. Experimental trials began in January and conclude this spring.

Story and photo by NAMRL Public Affairs

NAMRU-3 Initiates Project to Improve HIV Health Services

U.S. Naval Medical Research Unit No. 3 (NAMRU-3), in collaboration with the Egyptian Ministry of Health (MOH), initiated a Ford Foundation-funded project aimed at improving health services delivered to people living with HIV in Egypt.

The NAMRU-3 project team, consisting of Global Disease Detection and Response Program (GDDRP) Medical Anthropologist Anna-Leena Lohiniva, and NAMRU-3's Health Promotion Specialist, Dr. Manal Benkirane, first conducted a baseline survey to assess healthcare workers' knowledge, attitudes and practices related to HIV and AIDS in Om El Masryeen Hospital, a general hospital located in Giza. Once assessed, a training curriculum was introduced based on HIV basics, infection control and medical ethics. Emphasis was placed on the clarification of patient rights and challenging the stigma against people living with HIV. Cmdr. Vince Barthel, head of the Virology and Zoonotic Disease Research Program, initiated the training by delivering lectures on the basics of HIV transmission to an assembly of physicians.

"It was great!" Barthel said. "Most of them were very eager to learn about HIV and displayed caring enthusiasm for the welfare of those stricken by this unforgiving illness. We, as medical professionals, are bound by an oath to preserve life by whatever means possible."

After the opening lectures, healthcare professionals consisting of surgeons, nurses and medical assistants were made aware of the actual modes of HIV transmission.

Prevention and treatment updates were also addressed to correct misconceptions about HIV infection. At the conclusion of the lectures, attendees were introduced to a young woman who is HIV positive.

She graciously agreed to share her experiences on the reality of living with

CAIRO, Egypt- Mr. Ismail Raafat, NAMRU-3 Laboratory Technician, instructs students associated with Scientists for Egypt Next Generation (SNG) on how to dilute serum samples for enzyme-linked immunosorbent assay (ELISA) processing.

HIV in Egypt. "It was a good opportunity to discuss misconceptions about the disease and make the health professionals aware of the impact of discriminating practices," Benkiranesaid. "It was really great to see doctors who initially had shown resistance to dealing with a person living with HIV stand up to hug this person who shared her story with them."

Infection control training is currently underway, including modules on standard precautions such as environmental cleaning,invasive procedures and prevention of mother to child transmission.

"This training aims at providing healthcare professionals with the self confidence to carry out procedures safely when dealing with HIV-positive patients," Lohiniva said. "This is one of the main contributors to stigma."

A post-training survey is planned this month after modules on infection control and healthcare ethics are completed. This survey will evaluate the impact of the intervention on healthcare employees and determine their preparedness to treat people living with HIV.

The Ministry of Health wishes to make Om el Masryeen Hospital a referral site for HIV positive patients in need of surgical care.

Story and photo by Darnell P. Gardner, Jr.

NMRC Enterics Diseases Department Hosts Campylobacter Seminar

The Naval Medical Research Center (NMRC) Enteric Diseases Department hosted Dr. Stephen Trent, Associate Professor of Molecular Genetics and Microbiology, University of Texas-Austin, to present his work detailing surface antigens of Campylobacter jejuni January 12.

Trent spoke to the well-attended seminar about his research on how lipid modifications may represent an underappreciated component of pathogenesis as well as assembly of larger protein complexes. Specifically, he demonstrated that when the gene for phosphoethanolamine transferase, a protein necessary for lipid modifications, was deleted in a strain of C. jejuni, it rendered the previously resistant bacterium sensitive to anti-bacterial molecules.

Perhaps the most surprising result of Trent's research was that removal of the transferase gene also resulted in a lack of motility. Further biochemical analyses showed that this loss of motility was due to an inability to lipid modify the protein FlgG, a component of the flagellum, which ultimately affected the assembly of the larger protein complex.

Trent and his research team identified an unexpected link between two important virulence factors. He ended his presentation by saying that additional research is required to further characterize the roles of phosphoethanolamine transferases in the assembly of surface structures, pathogenesis and modification of lipids and proteins.

Story by Dr. Alexander Maue, NMRC IDD (Enterics)

Engineering Next Generation DNA Vaccines for Novel Pathogens

As part of the U.S. Military Malaria Vaccine Program (USMMVP), the Naval Medical Research Center (NMRC) hosted Dr. David B. Weiner, Professor of Pathology and Laboratory Medicine Chair in the Gene Therapy and Vaccine Program, University of Pennsylvania School of Medicine, to talk about DNA vaccines January 12. In a project funded by the Malaria Vaccine Initiative at PATH, Weiner is developing a tetravalent DNA vaccine for the prevention of malaria.

Weiner spoke to a packed conference room on his pioneering work developing DNA vaccines. In the early 1990s, Weiner's group was one of the first to test DNA vaccines in animals and humans, working initially to develop therapeutic vaccines for cancer. More recently, Weiner developed and tested DNA vaccines for HIV and human papilloma virus.

"A collaboration is planned between Weiner's laboratory, an industry partner, and USMMVP to develop and test DNA vaccines for malaria," said Navy Capt. Thomas Richie, research coordinator for the USMMVP. "There is hope that the technologies developed in Weiner's laboratory will help to improve the protection we have achieved with a novel genetic vaccine against malaria here at NMRC."

The vaccine Richie and his team are working on consists of three priming doses of DNA followed by a boost with an adenovirus vector. Like DNA plasmid rings, the viral vector encodes

GROTON, Conn. U.S. Navy Lt. Heath G. Gasier, Research Physiologist, Submarine Medicine and Survival Systems Department, prepares a sample for analysis in the new testing lab at NSMRL.

the malaria proteins and leads to a potent immune response. The NMRC DNA/adenovirus prime/boost vaccine currently protects only about a fourth of those receiving the vaccine, and it is hoped that by using Weiner's improvements, the efficacy of the vaccine can be increased.

Most recently, Weiner, working in collaboration with a biotech company, has used electroporation to improve the efficiency of DNA uptake into host cells. Electroporation involves injecting the vaccine and then passing a brief electric pulse through the tissue, momentarily permeablizing the cell membranes permitting increased DNA entry. These improvements – optimized plasmid design, cytokine adjuvants, and electroporation – have resulted in huge improvements in the immune response, rekindling excitement in this technology.

DNA vaccines are one form of genetic immunization, in which the DNA encoding a protein, rather than the protein itself, is injected. The DNA enters the vaccine recipient's cells, which express the malaria protein encoded by the DNA. The fact that the protein is expressed within the host cell, rather than administered exogenously, induces a different, potentially more powerful immune response than traditional protein-based vaccines.

Story by NMRC Public Affairs

Naval Submarine Medical Research Laboratory

The Naval Submarine Medical Research Laboratory (NSMRL), based at the New London Submarine Base (SUBASE) in Groton, Conn., is the only Department of Defense laboratory dedicated to research in submarine and diving medicine.

Starting in 2009, NSMRL moved from three buildings into two renovated spaces that will be bridged by a second story medical library. Updated communication and data infrastructure will complete the renovation, giving NSMRL both updated research laboratory facilities and support structure.

"The new facilities are an enormous improvement over the dated buildings," said Capt. Paul Kelleher, NSMRL commanding officer. "Although there have been many challenges during the refurbishment and multiple moves, the NSMRL staff have been exceptional in their support and collaboration."

NSMRL researches undersea human systems integration, submarine survival and rescue, submarine medicine, diver bio-effects, hearing conservation and situational awareness.

NSMRL's focus on Human Systems Integration (HSI) brings together human factors with training, manpower, survivability and more by recognizing that HSI is a key factor in optimizing systems performance. One of the most exciting developments at NSMRL is significant advances in researching potential displays for a 360-degree periscope. Incorporating second-life simulation components, researchers can control several factors of the experiment design, including weather, lighting, equipment mishaps and more, to better understand integration of the operator into the system.

NSMRL performs research and provides expertise in the complex problems of living in the closed submarine environment while breathing continually recirculated air, addressing such issues as identifying optimal watch schedules and shipboard lighting. The lab performed groundbreaking research addressing problems arising from a potential submarine sinking or other disaster with tests and evaluation of equipment, methods and procedures for surviving in a disabled submarine until rescue or escape to the ocean surface. NSMRL's latest efforts have resulted in major contributions to the submarine survival and escape guidance manual, the Guard Book. Dr. Wayne Horn, NSMRL medical director, provided recommendations to the Chilean mine disaster response team based on lessons learned from prior research in submarine survival.

The lab has a full-time staff of thirteen Ph.D. and medical senior investigators, four M.S. investigators, ten staff members in research and engineering support, five Navy divers and twelve operational support personnel.

NSMRL's diving facilities include three hyperbaric chambers, dodge pond (Naval Undersea Warfare Center (NUWC)) and a dive boat, as well as acoustic facilities, including a 1000 cubic meter anechoic chamber, a 140 cubic meterreverberant chamber and ten audio testing booths.

To achieve its mission, NSMRL works with government, industrial, and university partners, including NUWC, Naval Medical Center San Diego, NASA, NAVSEA, Naval Expeditionary Diving Unit, U.S. Army Research Institute of Environmental Medicine, the University of Rochester and MIT.

Story by NMRC Public Affairs

Join The Waves!

A History of the First Women in the Hospital Corps

From the day of Pearl Harbor, I said to myself that I need to go there one day. I had the urge to do something and help. I felt this was my duty. My brother had already joined the Navy, and nearly died during boot camp and got out on medical discharge. I felt like I had to pick up the ball for him.

~Frona Liston, HA1c (W), USNR

The Second World War saw the largest expansion of U.S. Navy and its Medical Department in history. Fueled by the Fleet and Marine Corps' unwavering call for trained enlisted medical personnel for wartime operations, the Bureau of Medicine and Surgery (BUMED) dramatically stepped up recruiting efforts for hospital corpsmen and organized new Hospital Corps Schools in Bainbridge and Bethesda, MD, Farragut, ID, and Great Lakes, IL. Between 1941 and 1945 alone, the Hospital Corps grew by an astounding 157 percent (from 10,547 to 132,500) and, for the first time in its history, presented opportunities for women on its rolls. At their peak wartime strength, women pharmacist's mates accounted for a quarter of all medical enlisted sailors on the home front. And as the war raged overseas and Navy hospital patient loads grew exponentially, these dedicated pioneers went far to keep the beleaguered Medical Department afloat.

From 1919—when the Yeomen (F) program was disestablished—to 1942, women were forbidden from serving as enlisted sailors. Only in August 1942 when the Navy organized the Women's Reserve program or WAVES (Women Accepted for Voluntary Emergency Service), under the direction of a former president of Wellesley College named Mildred McAfee were women finally able to contribute to the sea service while serving within it. By the end of the war, WAVES were serving as enlisted sailors and officers in the same ratings and specialties as their

male counterparts at every naval station in the continental United States and, after 1943, the Territory of Hawaii (TH).

Upon enlisting, all WAVES were sent to specially assigned training schools located at colleges throughout the United States for Navy indoctrination and boot camp. Among these schools was State Teacher's College in Cedar Falls, IA (now known as the University of Northern Iowa), which holds the distinction of admitting the first WAVES hospital corpsmen (AKA, Corps- WAVES). Over a five-week period starting on 16 December 1942, 1,200 WAVES at the State College were given a crash course in Navy history, organization, administration and personnel, physical education, and drilling. They then took aptitude tests to determine their service ratings. A little over one-percent (or 100) tested for the Hospital Corps.

Without question the first women hospital corpsmen were atypical WAVES and, for that matter, hospital corpsmen. Unlike their cohorts at the state college, or many of their male counterparts, each of these women entered the Navy already trained as medical technologists in the fields of laboratory science, dentistry, radiology, and occupational and physical therapy. Even before they completed their course of instruction, there was little doubt that these women would end up in the Navy medical system. Each was sent to naval hospitals in Bethesda, MD, and San Diego, CA, for four weeks of advanced Navy medical training and orientation. Upon completion, they received their permanent station (PCS) orders. For CorpsWAVES, PCS orders included 35 continental United States Navy hospitals, as well as a host of dispensaries, stations, and rehabilitation centers stateside.

Medical training for WAVES changed in January 1944 when a special Hospital Corps school for women was established at the National Naval Medical Center, Bethesda, MD (in Building 141). The course of instruction lasted four weeks and covered the topics of anatomy, physiology, first aid and minor surgery, hygiene and sanitation, nursing, metrology, and pharmacology. Graduates of the school were then sent to naval hospitals in St. Albans, NY, and San Diego, CA, for three weeks of on-the-job training in hospital wards, laboratories, and administrative offices.

By 1943, in order to meet with the ever-increasing demands for hospital corpsmen, BUMED increased its monthly recruitment quota to 600 CorpsWAVES in order to replace 25 percent of their male counterparts being shipped to sea and/or serving with the Marines. By 1945, some 240 WAVES were entering the CorpsWAVES School, every two weeks. This still was not enough for some leaders. Before the war's end, Secretary of the Navy James Forrestal was calling for up to 2,000 more each month "to help relieve the suffering and speed the recovery of wounded men."

War's cessation meant "emergency" service personnel were no longer needed, and officially the WAVES program ceased to exist after 1945. WAVES officers and enlisted personnel continued to serve in the Navy Reserve and the term WAVES was still used to describe these women (Note: the term was used interchangeably with Women's Reservists through the 1960s).

On 12 June 1948, restrictions to female Sailors were finally broken, when President Harry Truman signed the Women's Armed Services Integration Act into law. The passage of this equal opportunity law meant that all Navy women (not serving as nurses) finally had the choice to serve in either the Regular or Reserve Navy.

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A former Corps WAVES, HM1 Ruth Flora (third from right) became the first female Hospital Corpsman in the Regular Navy on 12 June 1948. Photo courtesy of BUMED Archives.

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